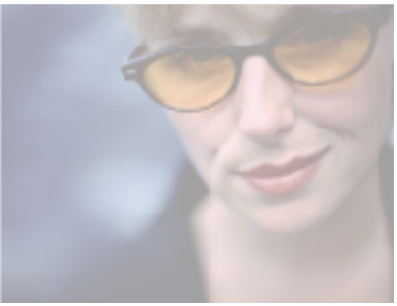


Gateway 960 Server

user's guide









Customizing | Troubleshooting

Gateway™

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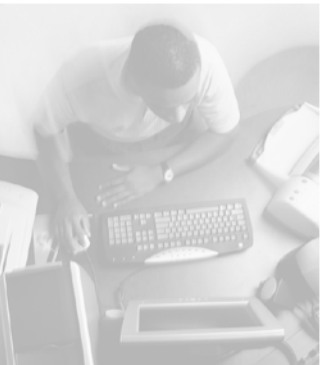
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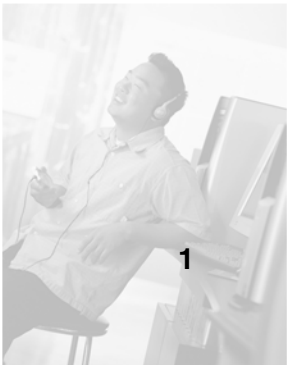
1 Checking Out Your Gateway Server

Read this chapter to learn:

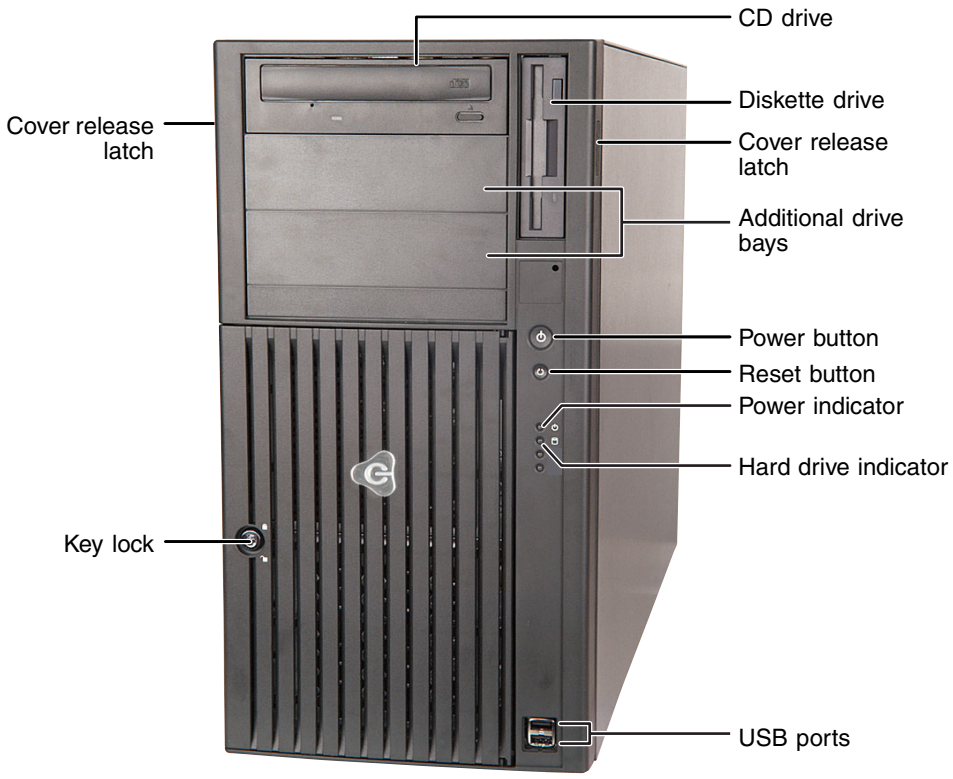
- Where drives, ports, jacks, and controls are located
- Where system board components are located
- What help resources are available

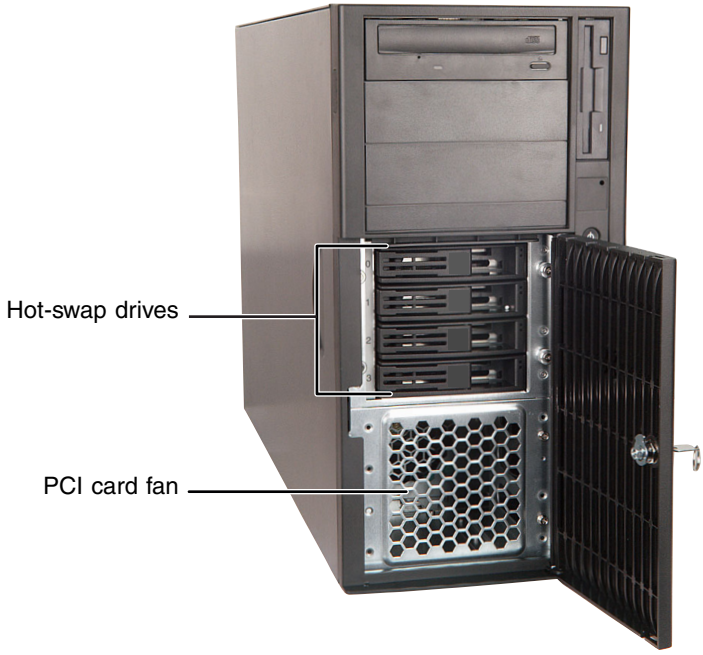




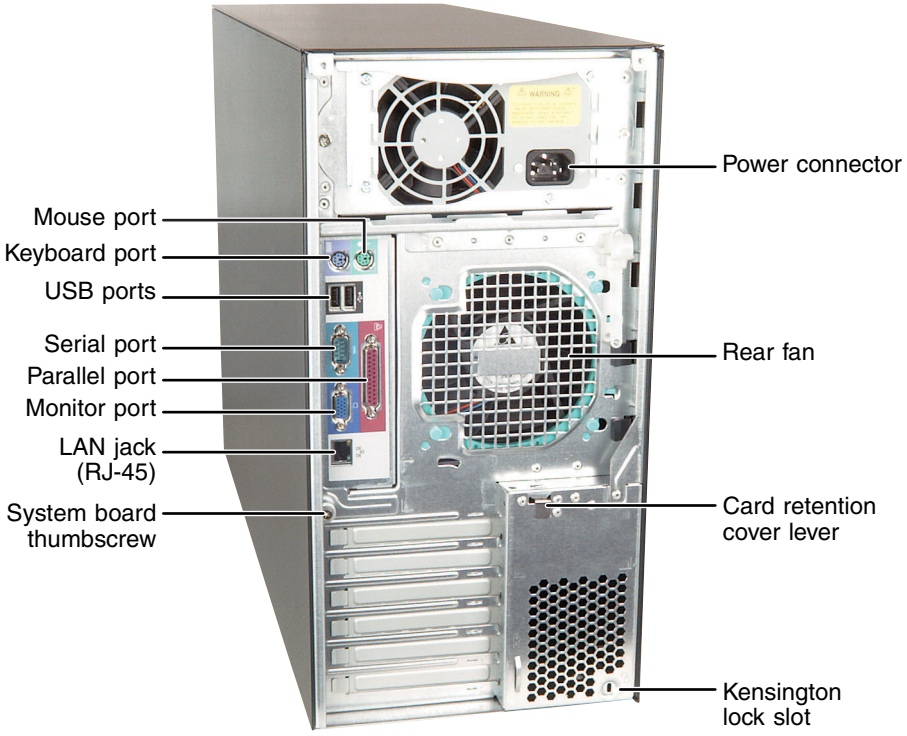


Front

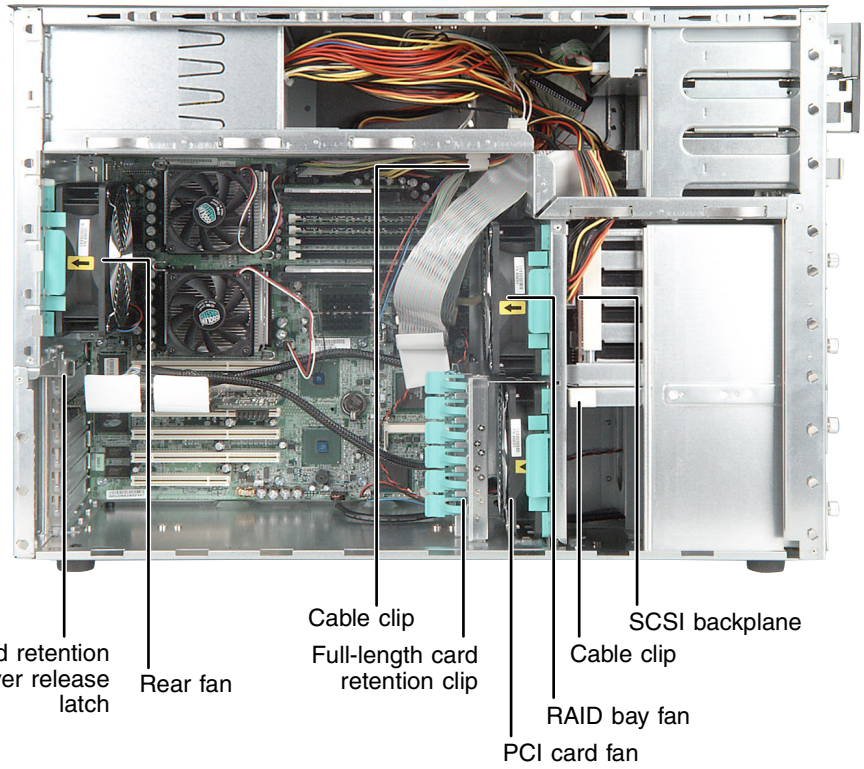

CD drive
Diskette drive
Cover release latch
Cover release latch
Additional drive bays
Power button
Reset button
Power indicator
Hard drive indicator
Key lock
USB ports


Hot-swap drives
PCI card fan

Back

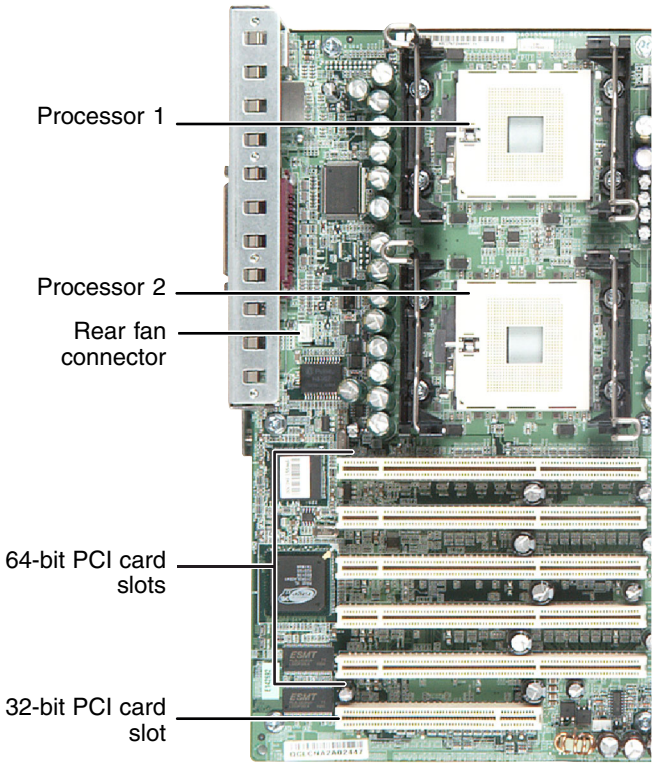

Power connector
Mouse port
Keyboard port
USB ports
Serial port
Parallel port
Monitor port
LAN jack (RJ-45)
System board thumbscrew
Rear fan
Card retention cover lever
Kensington lock slot

Interior

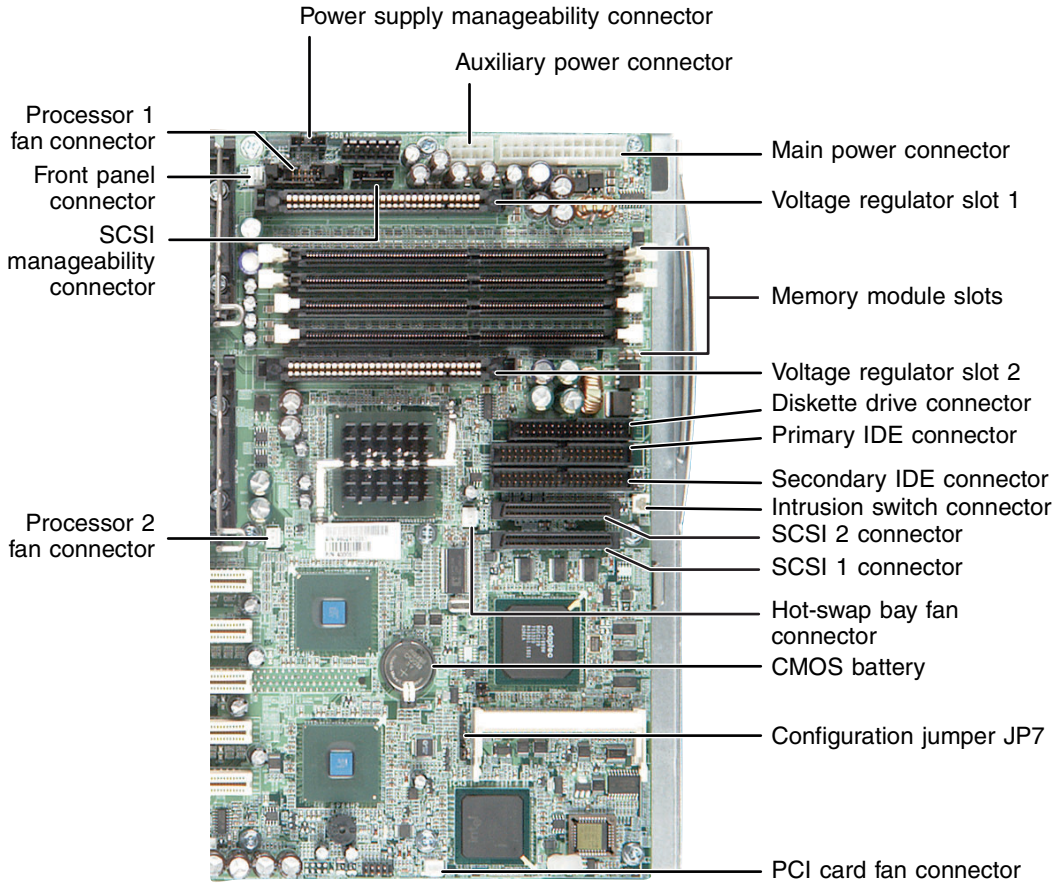

Card retention cover release latch
Rear fan
Cable clip
Full-length card retention clip
PCI card fan
RAID bay fan
Cable clip
SCSI backplane

System board

Left side



Right side


Power supply manageability connector
Auxiliary power connector
Processor 1 fan connector
Front panel connector
SCSI manageability connector
Main power connector
Voltage regulator slot 1
Memory module slots
Voltage regulator slot 2
Diskette drive connector
Primary IDE connector
Secondary IDE connector
Intrusion switch connector
SCSI 2 connector
SCSI 1 connector
Processor 2 fan connector
Hot-swap bay fan connector
CMOS battery
Configuration jumper JP7
PCI card fan connector

Getting Help

In addition to your operating system's documentation, you can use the following information resources to help you use your server.

Server Companion CD

Use the *Server Companion CD* to access file utilities, Windows 2000 Server drivers, and documentation for your server and its components. For more information, see *Using Your Server Companion CD*.

Online help

Many programs provide information online so you can research a topic or learn how to perform a task while you are using the program. Most online help information can be accessed by selecting a topic from a **Help** menu or by clicking a **Help** button.

You can search for information by viewing the help contents, checking the index, searching for a topic or keyword, or browsing through the online help.

Gateway Web site

Gateway provides a variety of information on its Web site to help you use your server.

Visit the Gateway Web site at support.gateway.com for:

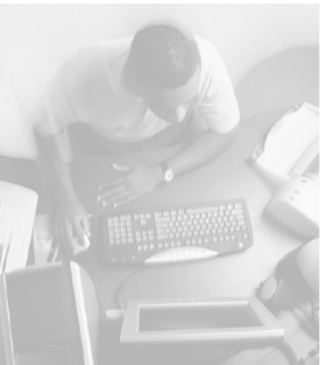
- Technical documentation and product guides
- Technical tips and support
- Updated hardware drivers
- Order status
- Frequently asked questions (FAQs)



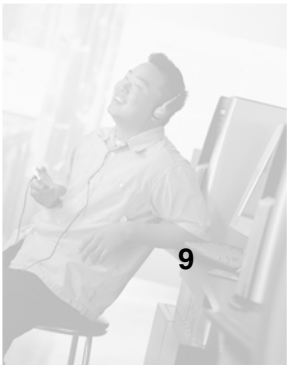
2 Setting Up Your Server

Read this chapter to learn how to:

- Use your server safely
- Start and turn off your server
- Restart (reboot) your server







Setting up the hardware

To make sure that your working environment is safe:

- Use a clean, dry, flat, stable surface for your server. Allow at least 6 inches at the rear of the server for cabling and air circulation.
- Use the instructions on your server's setup poster to set up your hardware.
- Use a grounded (three-prong) surge protector. A surge protector helps protect against AC power fluctuations. For additional protection from power outages, we recommend that you use an uninterruptible power supply (UPS).

Warning



Your server is supplied with a 3-wire AC power cord fitted with the correct plug style for your region. If this plug does not match the connector on your surge protector, UPS, or wall outlet, do not attempt to modify the plug in any way. Use a surge protector, UPS, or wall outlet that is appropriate for the supplied AC power cord.

- Avoid subjecting your server to extreme temperature changes. Do not expose your server to direct sunlight, heating ducts, or other heat-generating objects. Damage caused by extreme temperatures is not covered by your warranty. As a general rule, your server is safest at temperatures that are comfortable for you.
- Keep your server and magnetic media away from equipment that generates magnetic fields, such as unshielded stereo speakers. Strong magnetic fields can erase data on both diskettes and hard drives. Even a telephone placed too close to the server may cause interference.

Important



Keep the server boxes and packing material in case you need to send the server to Gateway for service. If you return your server in different packaging, your warranty may be voided.

Converting to a rackmount server

To convert your server to a rackmount configuration, see *Installing Your Gateway 960 or 980 Server into a Rackmount Cabinet*.

Protecting from power source problems

Surge protectors, line conditioners, and uninterruptible power supplies can help protect your server against power source problems.

Surge protectors

During a power surge, the voltage level of electricity coming into your server can increase to far above normal levels and cause data loss or server damage. Protect your server and peripheral devices by connecting them to a surge protector, which absorbs voltage surges and prevents them from reaching your server.

Warning



High voltages can enter your server through the power cord and the modem and network connections. Protect your server by using a surge protector. If you have a modem, use a surge protector that has the appropriate type of modem jack. During an electrical storm, unplug both the surge protector and the modem and network cables.

When your purchase a surge protector:

- Make sure that the surge protector meets the appropriate product safety certification for your location, such as Underwriters Laboratories (UL).
- Check the maximum amount of voltage the protector allows to pass through the line. The lower the voltage that the protector allows to pass through, the better the protection for your server.
- Check the energy absorption (*dissipation)* rating. The higher the energy absorption rating, the better the protection for your server.
- Check for line-conditioner capabilities. A line conditioner smooths out some of the normal line noise (small voltage fluctuations) of an electrical supply.

Line conditioners

A line conditioner protects your server from the small fluctuations in voltage from an electrical supply. Most servers can handle this variation, called *line noise,* without problems. However, some electrical sources include more line noise than normal. Line noise can also be a problem if your server is located near, or shares a circuit with, a device that causes electromagnetic interference, such as a television or a motor.

Some surge protectors and uninterruptible power supplies include simple line-conditioning capabilities.

Uninterruptible power supplies

Use an uninterruptible power supply (UPS) to protect your server from data loss during a total power failure. A UPS uses a battery to keep your server running temporarily during a power failure and lets you save your work and shut down your server. You cannot run your server for an extended period of time while using only the UPS. To buy a UPS, visit accessories.gateway.com.

Starting your server

Before you start your server for the first time:

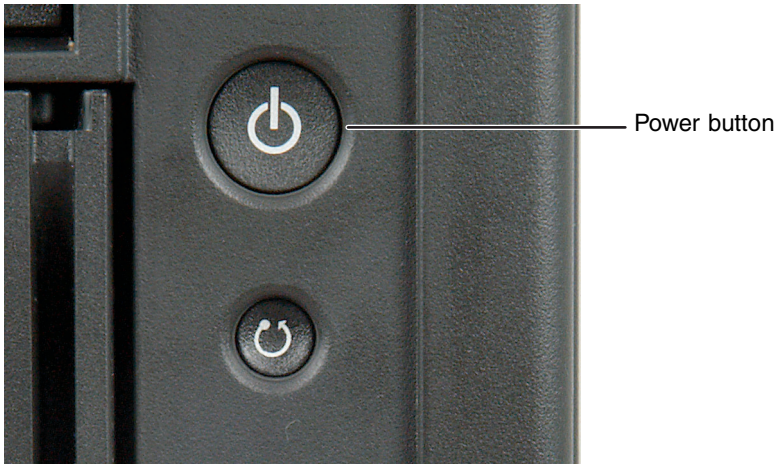
- Make sure that the server and monitor are plugged into a power outlet or surge protector and that the surge protector (if you are using one) is turned on.
- Make sure that all cables are connected securely to the correct ports and jacks on the back of the server.

Warning

When you connect peripheral devices to the server, make sure that your server and devices are turned off and the power cord is unplugged.

To start the server:

1. Turn on any peripheral devices connected to the server.
2. Press the power button on your server.



When the power indicator is...	It means...
Green	The server is turned on.
Off	The server is turned off.

If nothing happens when you press the power button:

- Make sure that the power cord is plugged in securely and that your surge protector (if you are using one) is plugged in and turned on.
- Make sure that the monitor is connected to the server, plugged into the power outlet or surge protector, and turned on. You may also need to adjust the monitor's brightness and contrast controls.

3 The first time you turn on the server, any pre-installed operating system may begin asking you for configuration settings. See your operating system's documentation for instructions on configuring advanced settings for your specific network, or see the *Installing Windows 2000 Server* installation guide.

To select which device your your server boots from:

1 During server startup, press **F10**. The *Boot* menu opens.

2 Select the device you want to boot from. Common choices include:

- Removable Dev.
- ATAPI CDROM
- Hard Drive
- IBA GE NIC

Understanding the power-on self-test

When you turn on your server, the power-on self-test (POST) checks the memory and components and displays any error messages. Write down any error messages that you see, then see "Error messages" on page 95 and "Beep codes" on page 100 for troubleshooting information.

Turning off your server

Every time you turn off your server, first shut down the operating system. You may lose data if you do not follow the correct procedure.

To turn off the server:

1. In Windows 2000 Server, click **Start**, then click **Shut Down**. The *Shut Down Windows* dialog box opens. Click the arrow button to open the **What do you want the computer to do** list, click **Shut down**, then click **OK**.

 - OR -

 If your server is running a different operating system, see the operating system's documentation for instructions on shutting down the operating system. Whenever possible, you should use the operating system's shut down procedure instead of pushing the power button.

2. If your server did not turn off automatically, press the power button. If nothing happens when you press the power button, press and hold it for five seconds and the server will turn off.

Warning



The power button on the server does not turn off server AC power. To remove AC power from the server, you must unplug the AC power cord from the wall outlet or power source. The power cord is considered the disconnect device to the main (AC) power.

Warning



If you routinely turn off your server (daily or weekly), do not unplug the server or use the On/Off switch on the surge protector. Regularly cutting off all power to your server may cause the CMOS battery to fail prematurely.

Restarting (rebooting) your server

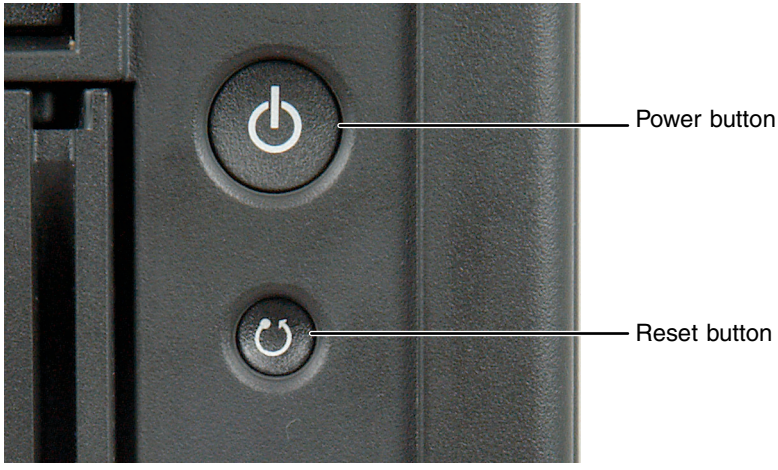
If your server does not respond to keyboard or mouse input, you may have to close programs that are not responding. If closing unresponsive programs does not restore your server to normal operation, you may have to restart (reboot) your server.

To close unresponsive programs in Windows 2000 Server:

1. Press CTRL+ALT+DELETE, then click **Task Manager**. A window opens that lets you close a program that is not responding.
2. Click the program that is not responding, then click **End Task**.

To restart your server:

1. Press the power button to turn off your server, then press it again to turn it back on.
2. If pressing the power button does not turn off your server, press the reset button on the front of your server.



Setting up the operating system

If you ordered your server with the operating system already installed by Gateway, Windows 2000 Server is completely installed and the basic settings are already configured. See your operating system's documentation for instructions on configuring advanced settings for your specific network.

If you are installing Windows 2000 Server because it was not already installed by Gateway, see the *Installing Windows 2000 Server* installation guide for instructions.

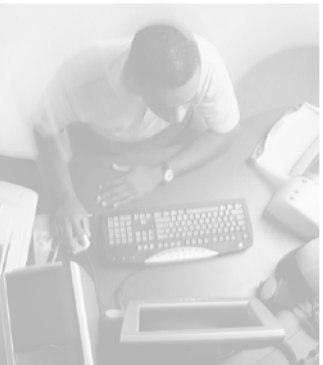
If you are installing a non-Windows operating system, see your operating system's documentation for instructions.



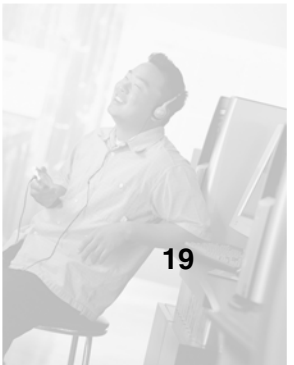
3 Maintaining Your Server

Read this chapter to learn how to:

- Care for your server
- Protect your server from viruses
- Manage hard drive space
- Clean your server
- Prepare for system recovery
- Perform system administration







Caring for your server

To extend the life of your server:

- Be careful not to bump or drop your server, and do not put any objects on top of it. The case, although strong, is not made to support extra weight.
- When transporting your server, we recommend that you put it in the original packaging materials.
- Keep your server and magnetic media away from equipment that generates magnetic fields, such as unshielded stereo speakers. Strong magnetic fields can erase data on both diskettes and hard drives. Even a telephone placed too close to the server may cause interference.
- Avoid subjecting your server to extreme temperature changes. Do not expose your server to direct sunlight, heating ducts, or other heat-generating objects. Damage caused by extreme temperatures is not covered by your warranty. As a general rule, your server is safest at temperatures that are comfortable for you.
- Keep all liquids away from your server. When spilled onto server components, almost any liquid can result in extremely expensive repairs that are not covered under your warranty.
- Avoid dusty or dirty work environments. Dust and dirt can clog the internal mechanisms and can cause the server to overheat.
- Use the following table to set up a regular maintenance schedule, which will keep your server running at its best.

Maintenance task	Immediately after purchase	Weekly	When needed	See...
Check for viruses		X	X	page 22
Clean up hard drives		X	X	page 24
Scan hard drive for errors		X	X	page 24
Defragment hard drive		X	X	page 26
Back up files			X	page 27
Clean tape backup drive			X	page 29 and the drive's documentation
Clean server case			X	page 28
Clean keyboard			X	page 29
Clean screen			X	page 29
Clean mouse			X	page 30
Create startup diskettes	X		X	page 32
Create emergency repair diskette			X	page 32
RAID consistency check			(Monthly)	The program's documentation

Protecting your server from viruses

A *virus* is a program that attaches itself to a file on a computer, then spreads from one computer to another. Viruses can damage data or cause your server to malfunction. Some viruses go undetected for a period of time because they are activated on a certain date.

A server that can access the Internet is more likely to get a virus than one that cannot access the Internet. Viruses can also be uploaded by network users who have shared file access or physical access to the server.

Protect your server from a virus by:

- Using a virus-checking program (not included) to check files on hard drives or removable media. See your program's documentation for more information.
- Checking all programs for viruses before installing them.
- Periodically updating your virus-checking program to protect against the latest viruses.

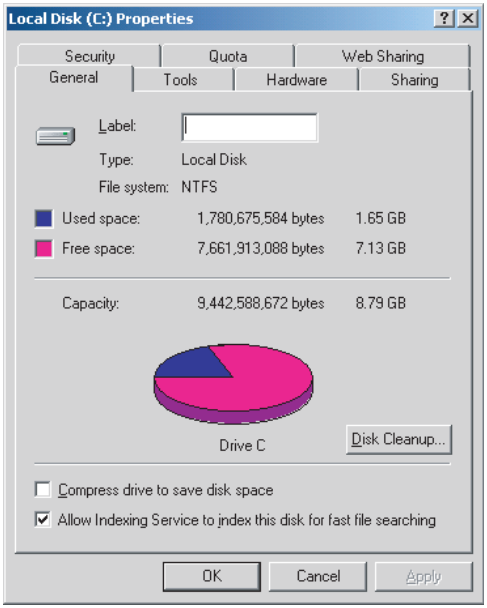
Managing hard drive space

Checking hard drive space

If your server is running an operating system other than Windows 2000 Server, see the operating system's documentation for instructions on checking hard drive space.

To check hard drive space in Windows 2000 Server:

1. Double-click the **My Computer** icon.
2. Right-click the drive that you want to check for available file space, then click **Properties**. Drive space information appears.



Using Disk Cleanup

Delete unneeded files, such as temporary Windows files, to free hard drive space. If your server is running an operating system other than Windows 2000 Server, see the operating system's documentation for instructions on deleting unnecessary files.

To use Disk Cleanup in Windows 2000 Server:

1. Double-click the **My Computer** icon.
2. Right-click the hard drive that you want to delete files from, for example Local Disk (C:), then click **Properties**. The *Properties* dialog box opens at the General tab.
3. Click **Disk Cleanup**. The *Disk Cleanup* dialog box opens.
4. Make sure that the checkbox next to each file type you want to delete is selected. For more information about file types you can delete, read the descriptions in the *Disk Cleanup* dialog box.
5. Click **OK**, then click **Yes**.

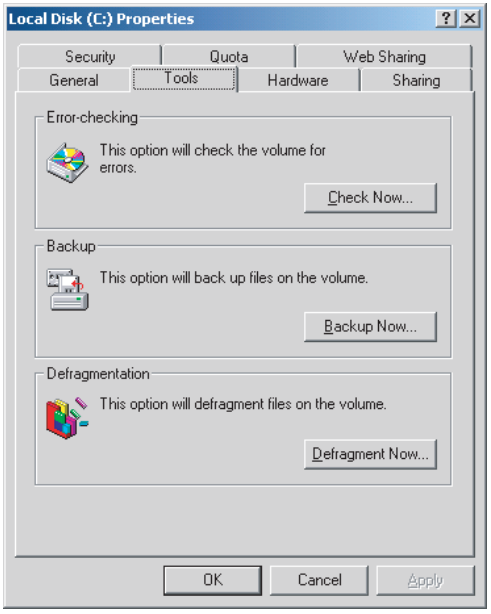
Checking the hard drive for errors

Hard drive error-checking programs examine the hard drive for physical flaws and file and folder problems. These programs correct file and folder problems and mark flawed areas on the hard drive so the operating system does not use them. If your server is running an operating system other than Windows 2000 Server, see the operating system's documentation for instructions on checking the hard drive for errors.

To check the hard drive for errors in Windows 2000 Server:

1. Double-click the **My Computer** icon.
2. Right-click the hard drive that you want to check for errors, for example Local Disk (C:), then click **Properties**. The *Properties* dialog box opens.

3 Click the **Tools** tab.



4 Click **Check Now**.

5 Click the options to use, then click **Start**. For help, press **F1**. Windows checks the drive for errors. This process may take several minutes.

6 Correct any problems that are found by following the on-screen instructions. After Windows has finished checking the drive for errors, it provides a summary of any problems that it may have found.

7 Click **OK**.

Defragmenting the hard drive

When working with files, your operating system divides the file information into pieces and stores them in different places on the hard drive. This is called *fragmentation*, and it is normal. In order for your server to use a file, your operating system must search for the pieces of the file and put them back together. This process slows hard drive performance.

In Windows 2000 Server, the Disk Defragmenter program organizes the data on the drive so each file is stored as one unit rather than as multiple pieces scattered across different areas of the drive. Defragmenting the information stored on the drive can improve hard drive performance.

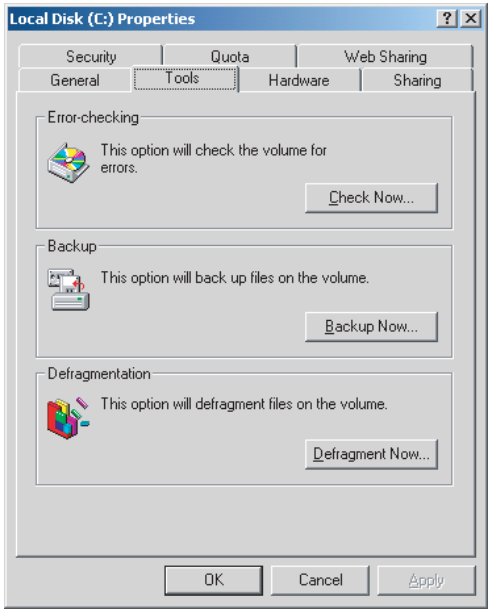
While Disk Defragmenter is running, do not use your keyboard or mouse because using them may continuously stop and restart the defragmenting process. Also, disconnect your server from the network while defragmenting because network communication may stop the defragmentation process and cause it to start over.

If your server is running an operating system other than Windows 2000 Server, see the operating system's documentation for instructions on defragmenting files.

To defragment a hard drive in Windows 2000 Server:

1. Double-click the **My Computer** icon.
2. Right-click the hard drive that you want to defragment, for example Local Disk (C:), then click **Properties**. The *Properties* dialog box opens.

3 Click the **Tools** tab.



4 Click **Defragment Now**.

5 Click **Action**, then click **Defragment**. Disk Defragmenter shows its progress on the screen. When finished, Disk Defragmenter asks if you want to quit the program.

6 Click **Close**.

Backing up files

Backing up files and removing them from the hard drive frees space for new files on the hard drive. It also protects you from losing important information if the hard drive fails or you accidentally delete files. You should back up your files regularly to a high-capacity backup device, such as a tape drive. For information on using your backup device to back up your files, see the device's documentation. To buy a tape backup device visit the Gateway Web site at accessories.gateway.com.

You should also periodically test the reliability of your backup device and procedures by performing a system restoration using your backup media.

Cleaning your server

Keeping your server clean and the vents free from dust helps keep your server performing at its best. You may want to gather these items and put together a server cleaning kit:

- A soft, lint-free cloth
- Glass cleaner
- An aerosol can of air that has a narrow, straw-like extension
- Isopropyl alcohol
- Cotton swabs
- A tape drive cleaning cartridge (if a tape drive is installed)
- A CD drive cleaning kit

Cleaning the exterior

Warning



When you shut down your server, the power turns off, but some electrical current still flows through your server. To avoid possible injury from electrical shock, unplug the power cord and all other cables connected to the server.

Always turn off your server and other peripheral devices before cleaning any components.

Use a damp, lint-free cloth to clean your server and other parts of your system. Do not use abrasive or solvent cleaners because they can damage the finish on components.

Your server is cooled by air circulated through the vents on the case, so keep the vents free of dust. With your server turned off and unplugged, brush the dust away from the vents with a damp cloth. Be careful not to drip any water into the vents.

Cleaning the keyboard

You should clean the keyboard occasionally by using an aerosol can of air with a narrow, straw-like extension to remove dust and lint trapped under the keys.

If you spill liquid on the keyboard, turn off your server and turn the keyboard upside down. Let the liquid drain, then let the keyboard dry before trying to use it again. If the keyboard does not work after it dries, you may need to replace it. Keyboard damage resulting from spilled liquids is not covered by your warranty.

Cleaning the screen

If your computer screen is a flat panel display, use a soft cloth and water to clean the computer screen. Squirt a little water on the cloth (never directly on the screen), and wipe the screen with the cloth.

Warning



The computer screen is made of specially coated glass and can be scratched or damaged by abrasive or ammonia-based glass cleaners.

- OR -

If your computer screen is not a flat panel display, use a soft cloth and glass cleaner to clean the monitor screen. Squirt a little cleaner on the cloth (never directly on the screen), and wipe the screen with the cloth.

Cleaning the tape drive

If you use a tape drive to back up your files, regular maintenance will lengthen the life of the drive. To maintain the drive's reliability:

- Clean the drive monthly with the cleaning cartridge included with the drive.
- Remove the tape from the drive whenever the drive is not being actively used.

Cleaning the mouse

If the mouse pointer begins moving erratically across the screen or becomes difficult to control precisely, cleaning the mouse will likely improve its accuracy.

If you have an optical mouse, clean the mouse by wiping the bottom of the mouse with a clean cloth.

If you have a trackball mouse, follow these instructions.

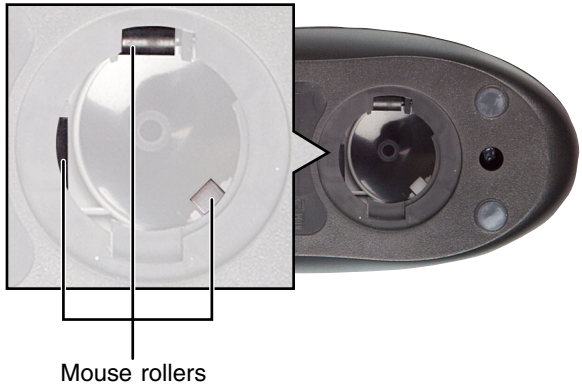
To clean your trackball mouse:

1. Turn the mouse upside down.
2. Rotate the retaining ring on the bottom of the mouse counter-clockwise, then remove the retaining ring and mouse ball.



3. Remove any dust, lint, or dirt from the mouse ball with a soft cloth.

4 Clean the mouse rollers with a cotton swab dipped in isopropyl alcohol.



5 Replace the mouse ball and lock the retaining ring into place.

Preparing for system recovery

You should take precautions that will make it easier to reinstall or repair your operating system if system files become corrupted. These precautions make it easier to restart your server and recover damaged files.

Creating startup diskettes

If your system files are corrupted, you may not be able to start the server from the hard drive. *Startup diskettes* are diskettes that let you start the server and attempt to fix the problem. If your server is running an operating system other than Windows 2000 Server, see your operating system's online help or documentation for instructions on creating startup diskettes.

To create startup diskettes in Windows 2000 Server:

1. Format four 3.5-inch 1.44 MB diskettes.
2. Insert one diskette into the diskette drive of a computer running any version of Windows.
3. Insert the *Windows 2000 Server* CD into the CD drive.
4. Click **Start**, then click **Run**.
5. Type **d:\bootdisk\makeboot a:** (where **d:** is the letter assigned to your CD drive).
6. Click **OK**, then follow the on-screen prompts.

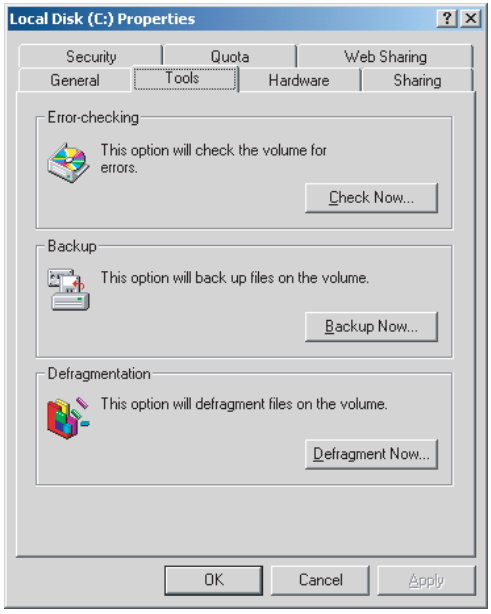
Creating an emergency repair diskette

Windows 2000 Server lets you create an emergency repair diskette to back up critical operating system files, including the registry. The emergency repair diskette is not a bootable diskette. For instructions on using the diskette, see your Windows 2000 Server online help or documentation.

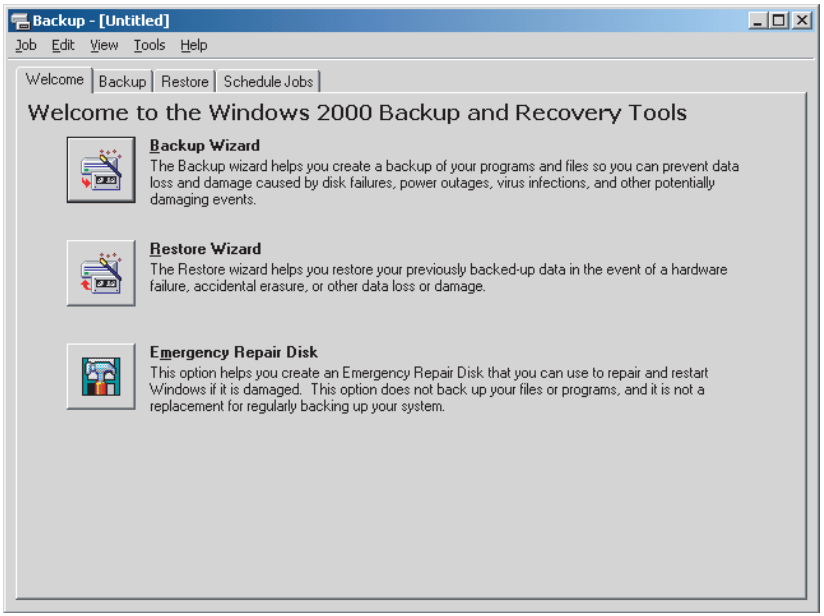
If your server is running an operating system other than Windows 2000 Server, see your operating system's online help or documentation for instructions on creating startup diskettes.

To create an emergency repair diskette in Windows 2000 Server:

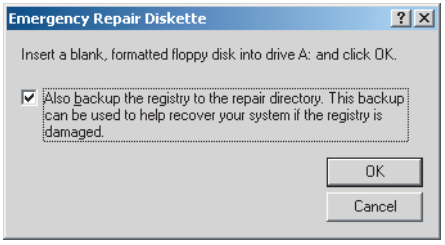
1. Format one 3.5-inch 1.44 MB diskette and insert it into your server's diskette drive.
2. Double-click the **My Computer** icon.
3. Right-click the C: drive, then click **Properties**. The *Properties* dialog box opens.
4. Click the **Tools** tab.



5 Click **Backup Now**. The *Backup* window opens.



6 Click **Emergency Repair Disk**. The *Emergency Repair Diskette* dialog box opens.



7 Click **Also back up the registry to the repair directory**, then click **OK**. The files are backed up to the diskette.

Keeping a record of system configuration

Recording your operating system configuration

Some operating systems let you print a summary of the configuration of your server and the memory allocation. This printed summary can provide information you need to reset your system configuration correctly if the information is lost. If your server is running an operating system other than Windows 2000 Server, see the operating system's documentation for instructions on recording your system configuration.

To record your operating system configuration in Windows 2000 Server:

1. Click **Start**, **Programs**, **Administration tools**, then click **Computer Management**.
2. Click **System Information**. Information about your system appears in the window to the right. For more specific system information, click on the appropriate folder under **System Information**.
3. To print a detailed report of your system's configuration, click **Action**, then click **Print**.
4. To save a detailed report of your system's configuration as a text file, click **Action**, then click **Save As Text File**.

Recording your BIOS configuration

Some server information can be viewed only in the BIOS Setup utility.

To record your BIOS configuration:

1. Print the appendix for BIOS Settings in this guide.
2. Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
3. Record the BIOS settings on your printout.

System administration

ManageX Event Manager

ManageX lets you manage multiple computers on a Windows 2000 Server or Novell Netware network from a single window, then implement commands and policies across the network with a single action. With ManageX you can run system management tasks which are triggered by certain events or conditions.

You can find additional documentation for ManageX Event Manager on the *Server Companion CD* and the *ManageX Event Manager* CD.

Server security

To prevent unauthorized use of the server, you can set BIOS startup passwords. To monitor unauthorized access to server components, you can view the event log.

Using BIOS security passwords

After you set up passwords, you must enter the correct password to start the server and the BIOS Setup utility. Set up a supervisor password to prevent unauthorized access to the BIOS Setup utility. After you create a supervisor password, you can set up a user password to prevent unauthorized access to the server.

- Enter either password to finish starting the server.
- Enter the supervisor password for access to the BIOS Setup utility.

For information about resetting BIOS passwords, see "Resetting BIOS passwords" on page 91.



To set the BIOS security passwords:

1. Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
2. Select the **Security** menu.

3 Select the password to set according to the following table.

Option	Description
Supervisor password	To control access to system configuration, set a supervisor password. Using a supervisor password lets you make changes to any setting in the BIOS. Passwords can be cleared. To clear the passwords, see "Resetting BIOS passwords" on page 91.
User password	To control access to the server, set a user password. The supervisor can set the level of access granted to the user password. The user password access levels are: ▪ **No Access**. User cannot access the BIOS Setup utility. ▪ **Limited**. User can change only the date and time. ▪ **View Only**. User can see all settings, but cannot change them. ▪ **Full**. User can change every setting except the supervisor password. Passwords can be cleared. To clear the passwords, see "Resetting BIOS passwords" on page 91.

4 Type the password and press ENTER, then type it again and press ENTER.

5 Exit the BIOS Setup utility.

Monitoring case access

Whenever the server's case cover is removed, the intrusion switch is activated and an event is recorded in the event log.

To view the event log:

1 Restart your server, then press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.

2 Open the **Advanced** menu, select **Event Log control**, then select **View Event Log**. The event log is shown on the screen.

Using your Server Companion CD

You can use your *Server Companion CD* to:

- Install hardware drivers
- Install programs
- View server documentation

Instructions for using the CD are provided in *Using Your Server Companion CD*.

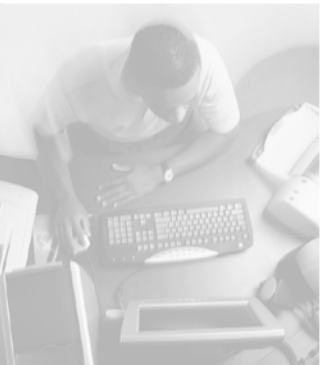


4 Installing Components

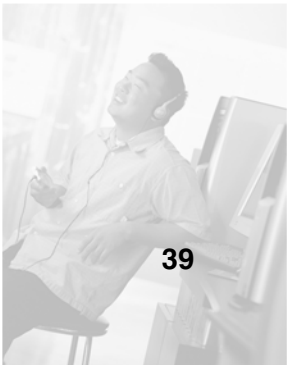
Read this chapter to learn how to:

- Open and close the server case
- Install drives and memory modules
- Install expansion cards
- Install processors and replace voltage regulators
- Replace the power supply
- Replace the SCSI backplane
- Replace the system board
- Replace case fans
- Replace the CMOS battery

You must open your server case to install components. If you are not comfortable with these procedures, get help from a more experienced computer user or computer service technician, or contact Gateway Technical Support.







Preparing to install components

Selecting a place to work

Work on your server in an area that:

- Is clean (avoid dusty areas)
- Is a low-static environment (avoid carpeted areas)
- Has a stable surface on which to set your server
- Has enough room to place all of your server parts
- Is near a grounded outlet so you can test your server after installation
- Is near a telephone (in case you need help from Gateway Technical Support). The telephone must be directly connected to a telephone jack and cannot be connected to your server.

Gathering the tools you need

Some tools and supplies that you may need to work on your server are:

- A notebook to take notes
- A Phillips screwdriver
- A small flat-blade screwdriver
- Small containers to store various types of screws
- A grounding wrist strap (available at most electronic stores)

Preventing static electricity discharge

The components inside your server are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Warning



ESD can permanently damage electrostatic discharge-sensitive components in the server. Prevent ESD damage by following ESD guidelines every time you open the server case.

Warning



To avoid exposure to dangerous electrical voltages and moving parts, turn off your server and unplug the power cord and modem cable before opening the server case.

Before working with server components, follow these guidelines:

- Turn off the server, then unplug the power cord and all other cables.
- Press the power button to drain any residual power from the server.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of the server. You can also touch a bare metal surface on the back of the server with your finger.

Warning



To prevent risk of electric shock, do not insert any object into the vent holes of the power supply.

- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Avoid working on the server when your work area is extremely humid.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold expansion cards by their edges or their metal mounting brackets. Avoid touching the edge connectors and components on the cards. Never slide expansion cards or components over any surface.

Opening the server case

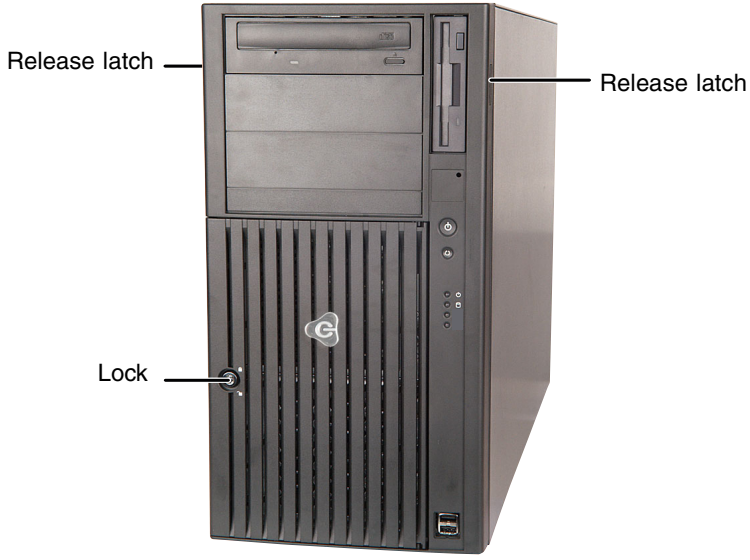
Because the components inside your server are extremely sensitive to static electricity, make sure that you follow the instructions at the beginning of this chapter to avoid static electricity damage.

Warning

For correct cooling and air flow, always reinstall the side panel and the air duct (if included) before you turn on the server. Operating the server without the cover in place can damage server components.

To open the server case:

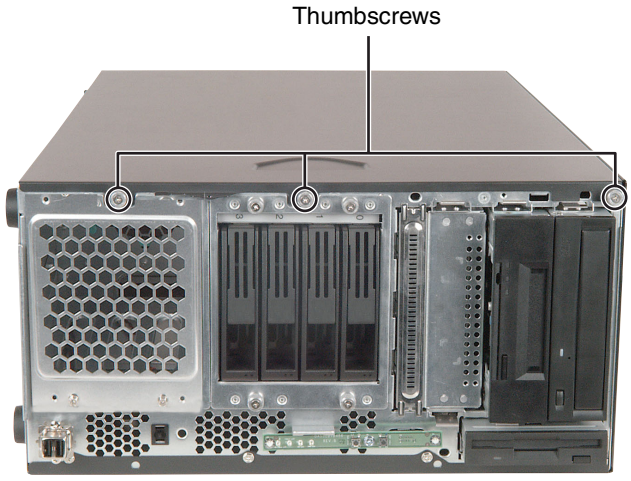
1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Turn off the server, then disconnect the power cord and all other cables connected to the server.
3. Unlock the front cover.



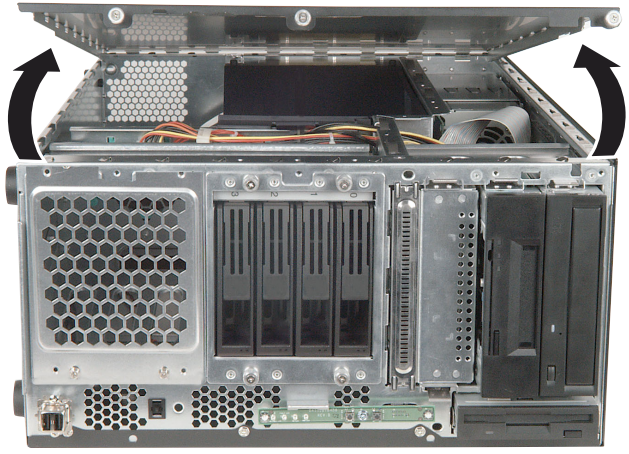
4. Press the two front cover release latches, then pull the cover away from the server.

5 For more stability, place the server on its side.

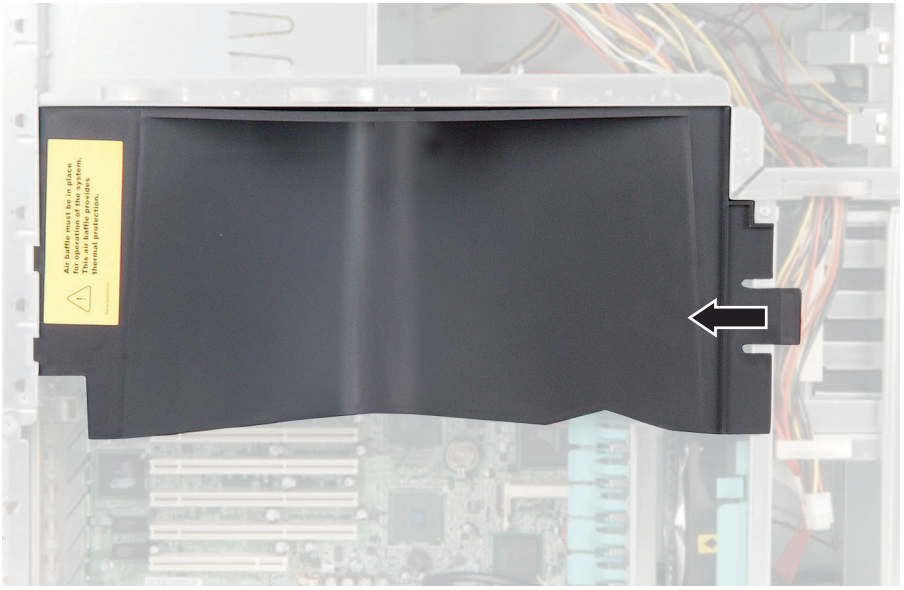
6 Loosen the three captive thumbscrews that secure the side panel to the server.



7 Slide the side panel toward the front of the case about ½ inch, then lift the panel away from the server.



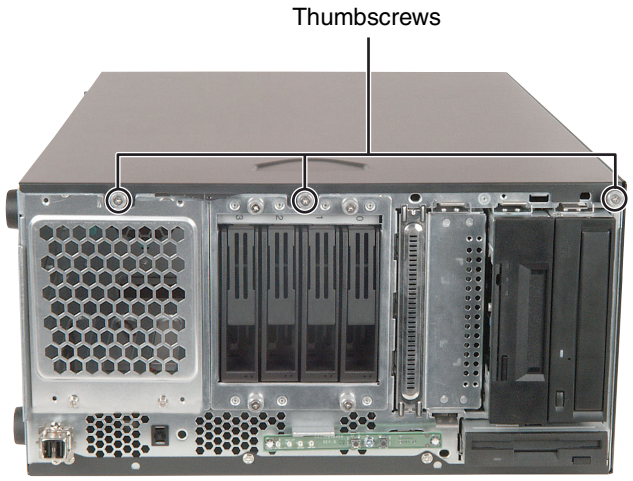
8 If your server has an air duct, pull the tab on the right until it releases the duct from the server, then lift the duct away from the server.



Closing the server case

To close the server case:

1. For more stability, set the server case on its side.
2. Make sure that all of the internal cables are arranged inside the case so they will not be pinched when you close the case.
3. Replace the air duct if one came with your server.
4. Align the side panel's top and bottom tabs into the case notches, then slide the side panel toward the back of the case until the back of the side panel is flush with the back of the case.
5. Tighten the three captive thumbscrews that secure the front of the cover to the server case.



6. Set the case upright.

7 Align the notch in the bottom of the front cover with the rail on the front of the case, then swing the cover against the case.



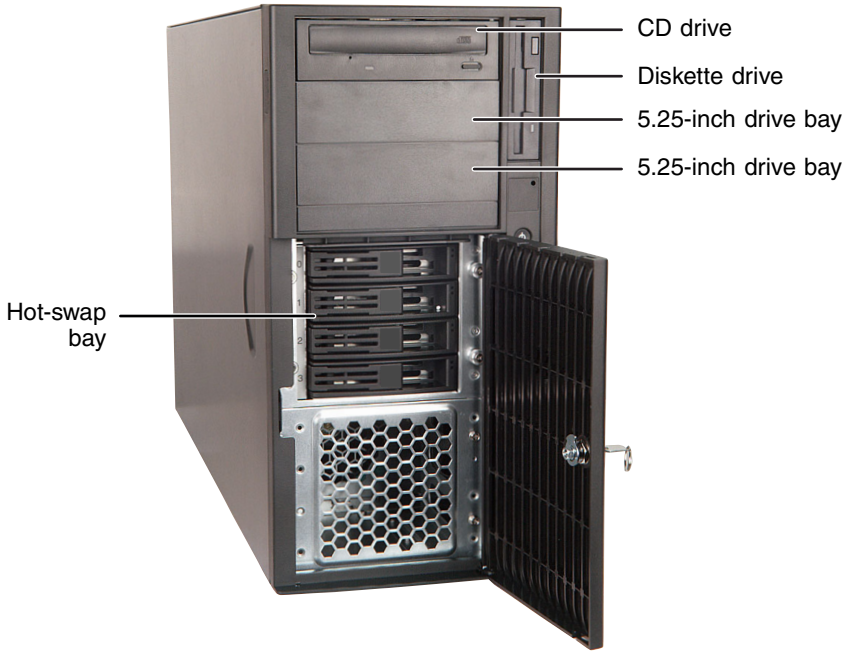
8 Lock the front cover.

9 Reconnect the power cord and all other cables.

Installing drives

Your server's basic configuration includes one CD drive and one 3.5-inch diskette drive. Two additional 5.25-inch drive bays are also provided for more drives.

Your server can have up to eight SCSI hard drives in the hot-swap bay behind the front access door.



As you prepare to install drives, remember:

- Do not use the top 5.25-inch drive bay for drives which have electronic components exposed on the top. Drive mounting rails at the top of the bay may damage any exposed electronic components.
- Before you install a drive, see the drive's documentation for information on configuring the drive, setting drive jumpers, and attaching cables.
- IDE hard drives can be configured as single, master, slave, or cable-select. IDE CD drives can be configured as master, slave, or cable-select.

- If cable-select is available (drive assignments will be marked on the cable), the IDE cable assigns the master/slave positions to the drives it connects. You can override these assignments using the jumpers on the drives.
- If cable-select is not available and only one drive is attached to an IDE controller cable, configure the drive as master if it is a CD drive. If two drives of any type are attached to the cable, configure one as master and one as slave.

- You may need to configure the drives you install using the BIOS Setup utility. Press **F2** at startup to open the BIOS Setup utility.

Installing a media drive

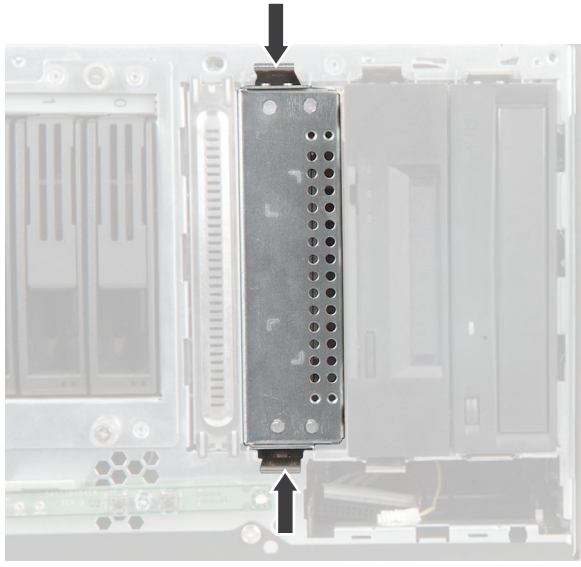
Use these instructions to install or replace a diskette, CD, or tape drive.

To install a 5.25-inch drive:

1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. If you are replacing a drive, go to Step 7.

 - OR -

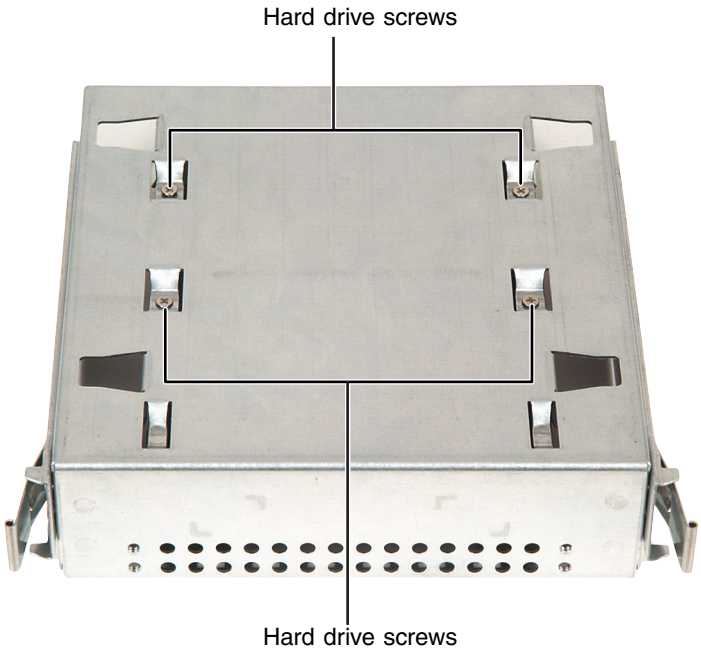
If you are adding a new drive, remove the bay's 3.5-inch drive adapter. To remove the adapter, press and hold the two locking clips against the adapter, then pull it out of the server.



4 Press the drive bay face plate release tabs inward, then pull the face plate away from the front cover.

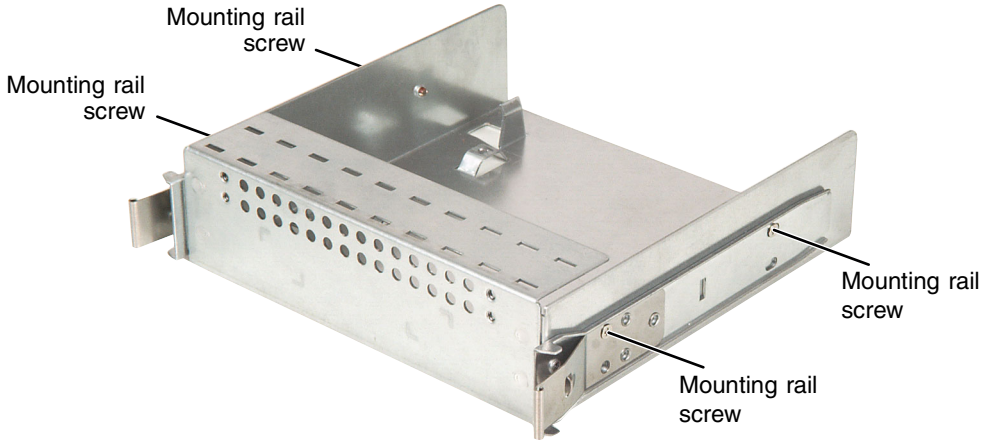


5 If you are adding a 3.5-inch hard drive, use the screws that came with your hard drive to secure the drive to the 3.5-inch drive adapter.

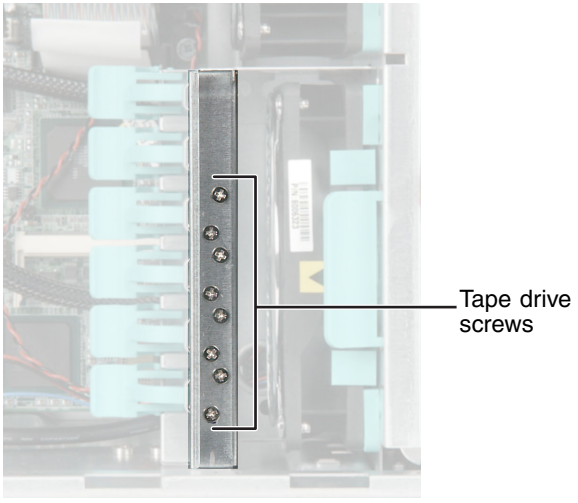


- OR -

If you are replacing the 3.5-inch drive adapter with a new 5.25-inch drive, remove the two screws connecting each mounting rail to the adapter, remove the rails, then attach the rails to the sides of your new drive.



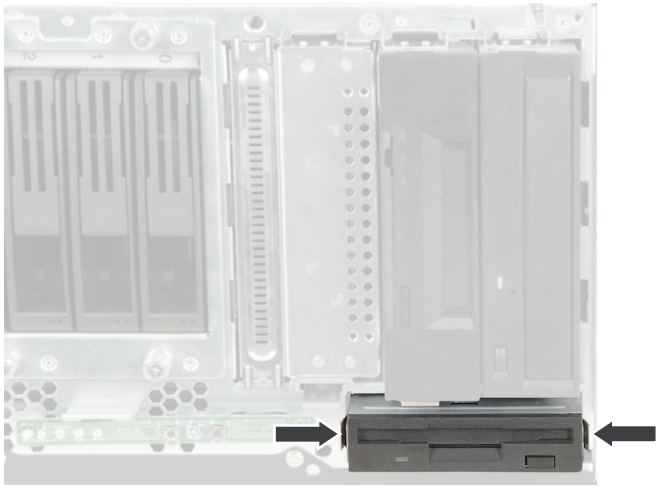
Two screws for mounting the rail onto CD and diskette drives are stored on each rail. Screws for mounting onto most tape drives are stored in the case near the full-length card retention clips.

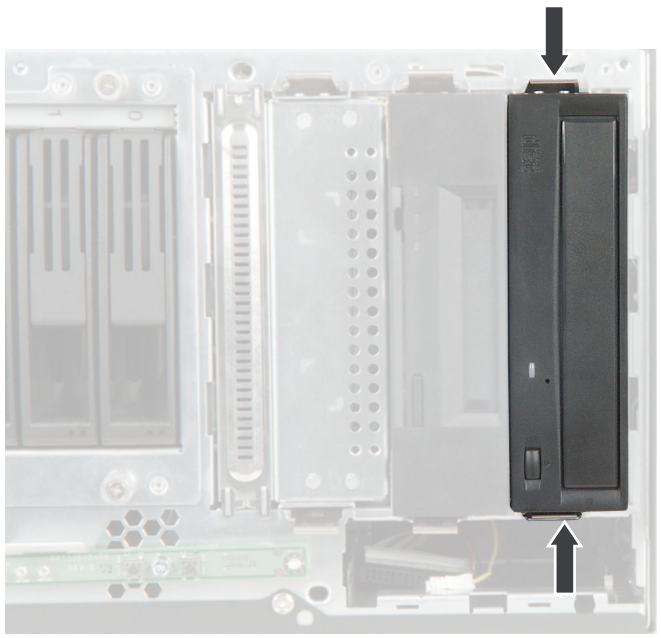


6 Go to Step 10.

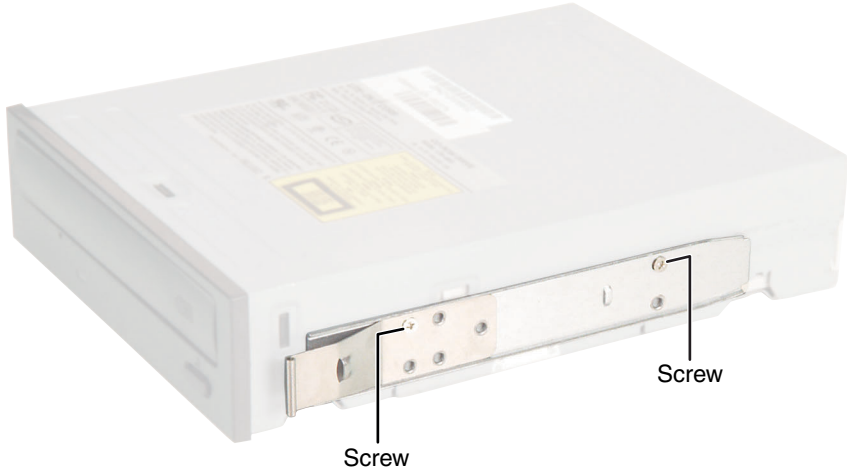
7 If you are replacing a drive, disconnect the old drive's cables.

8 Press the old drive's release latches against the drive, then pull the drive out of the bay. If you are removing a drive from one of the top two bays, first remove the 3.5-inch diskette drive so you can reach the 5.25-inch drive's release latch.

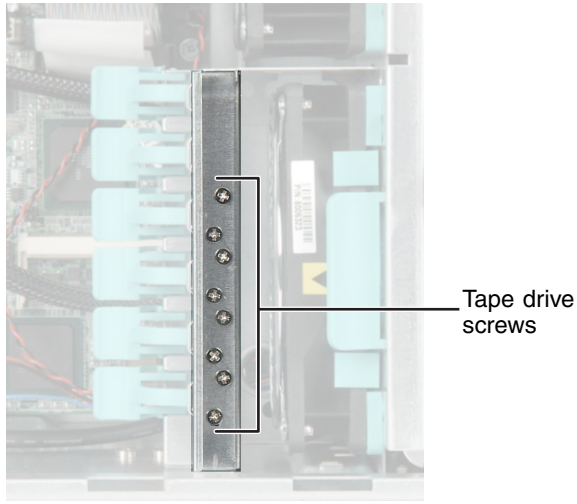




9 Remove the screws that secure the mounting rails to the old drive, then use the screws to attach the rails to the new drive.



Screws for mounting the rails onto most tape drives are stored in the case near the full-length card retention clips.



10 Set any jumpers on the new drive. See the drive's documentation for further instructions.

11 Slide the new drive into the drive bay until the drive rails snap into place.

12 Connect the drive cables following the instructions in the drive's documentation.

13 Follow the instructions in "Closing the server case" on page 45.



Installing a hard drive

Use this procedure to add or replace hard drives in the hot-swap bay. Your server supports up to eight 1-inch high 3.5-inch SCA SCSI hard drives. You can purchase additional SCSI drives through your Gateway sales representative.

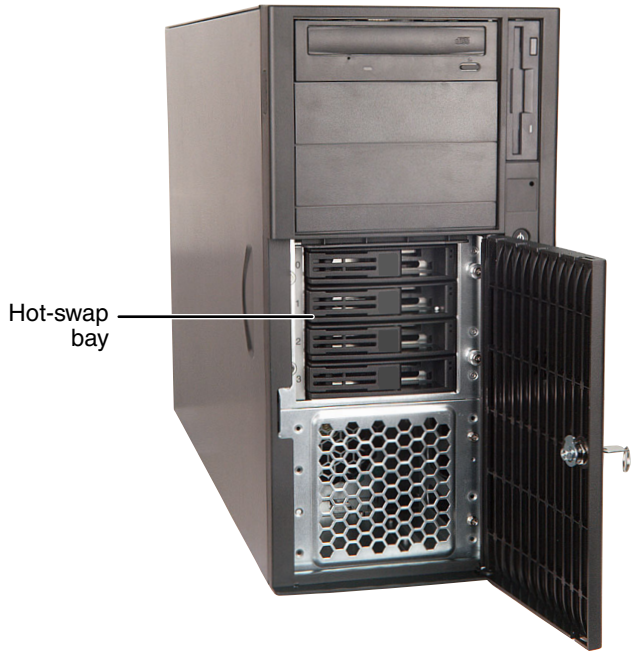
Important

The numbers on the left side of the hot-swap bay identify the SCSI ID of each drive. Install the topmost drives first.

Gateway tests and verifies the operation and compatibility of the drives it sells. Additional or replacement drives must conform to Gateway standards.

To install a hard drive:

1 Unlock the front cover's lock, then swing the hot-swap bay door open.



2 If a drive has failed, determine which drive has failed by running storage console software. Match the software's SCSI ID for the failed drive with the SCSI ID number to the left of the hot-swap bays.

3 Pull the drive tray's lever away from the server, then pull the tray straight out of the server.

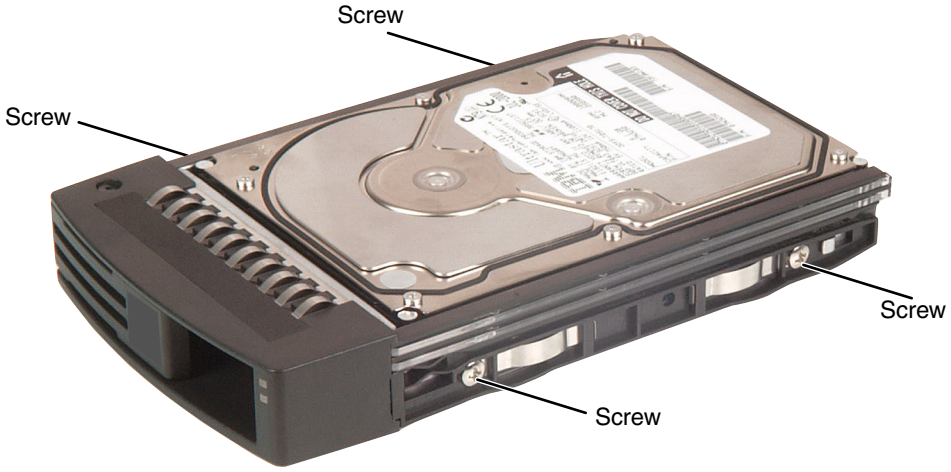
Caution

Before you remove a failed drive, use the appropriate software and utilities installed on the server to stop all activity on the failed drive. Instructions for using the software are provided by the software manufacturer. Failure to do so may destroy the data on the drive.





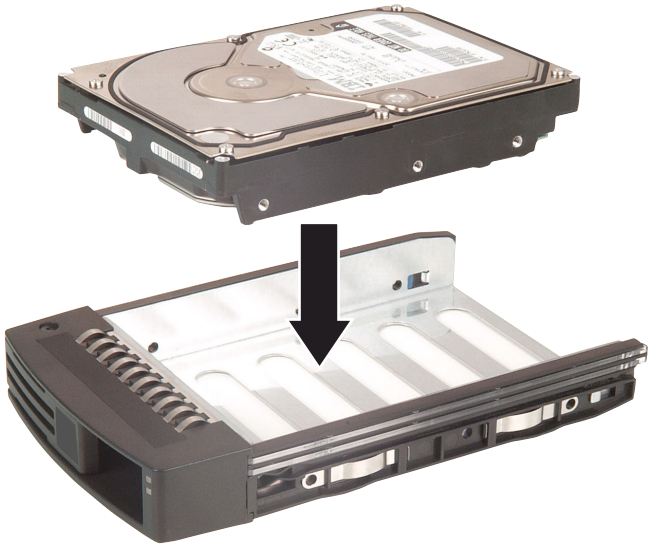
4 If you are replacing a hard drive, remove the four screws that secure the hard drive to the drive tray, then remove the drive from the tray.



- OR -

If you are adding a new drive, remove the bag taped to the inside of the drive tray, then remove the screws from the bag.

5 Line up the screw holes in the new drive with the holes in the side of the drive tray, then secure the drive to the tray with the four screws you removed in Step 4.



6 Make sure that the tray's release lever is open, then slide the new drive into the empty hot-swap bay.



7 Close the drive's release lever.

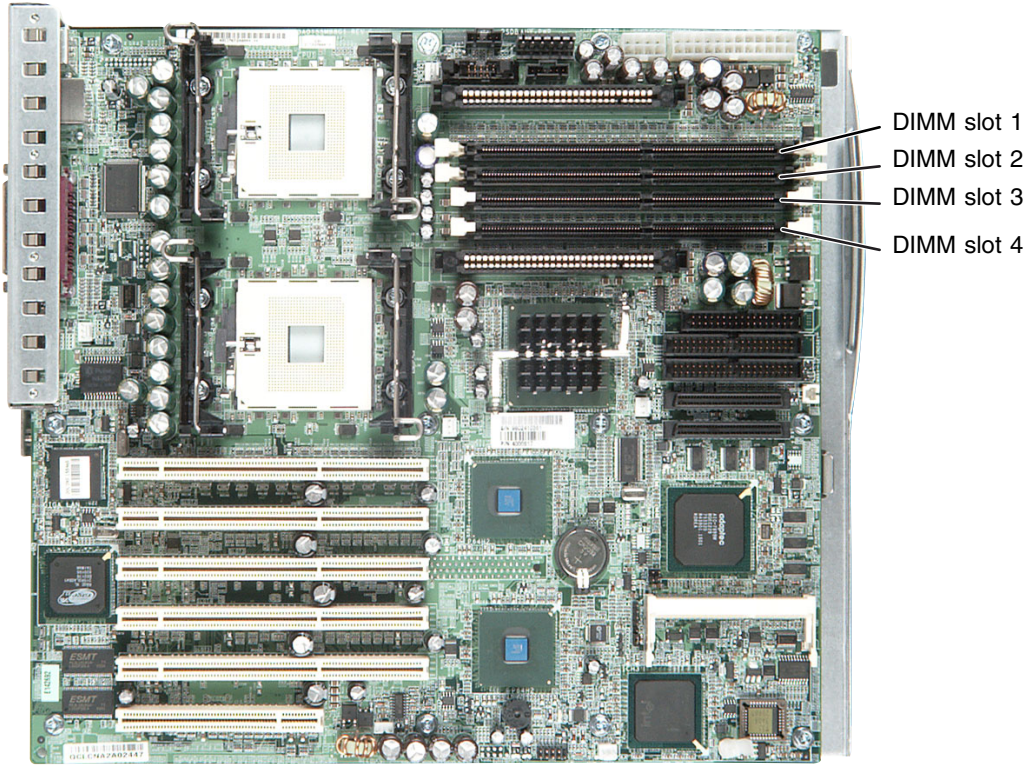
Installing memory

When you upgrade your server memory, make sure that you install the correct type of memory module for your server. Your server uses PC2100 DDR SDRAM registered ECC DIMM memory. The following illustration shows the location of the memory modules on the system board.

Warning

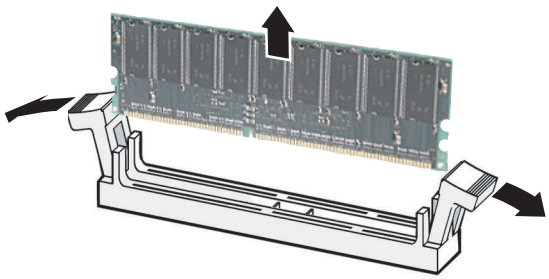
Modules must be installed in identical pairs. Use only PC2100 DDR SDRAM registered ECC DIMM memory modules.

Install memory first into slots 1 and 2, then into slots 3 and 4. If you have memory installed incorrectly, your server will not start up.



To install or replace memory:

1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. Pull the plastic tabs away from the sides of the memory module slot. If you are replacing a memory module, remove the old module.



4. Align the notch on the new module with the notch in the memory module slot and press the module firmly into the slot. The tabs on the sides of the memory slot should secure the memory module automatically.
5. Follow the instructions in "Closing the server case" on page 45.
6. Turn on the server. Make sure that the server turns on and that the operating system completely loads.
7. If your server is running Windows 2000 Server, right-click the **My Computer** icon, then click **Properties**. The amount of memory in your server is shown at the bottom of the *System Properties* dialog box.

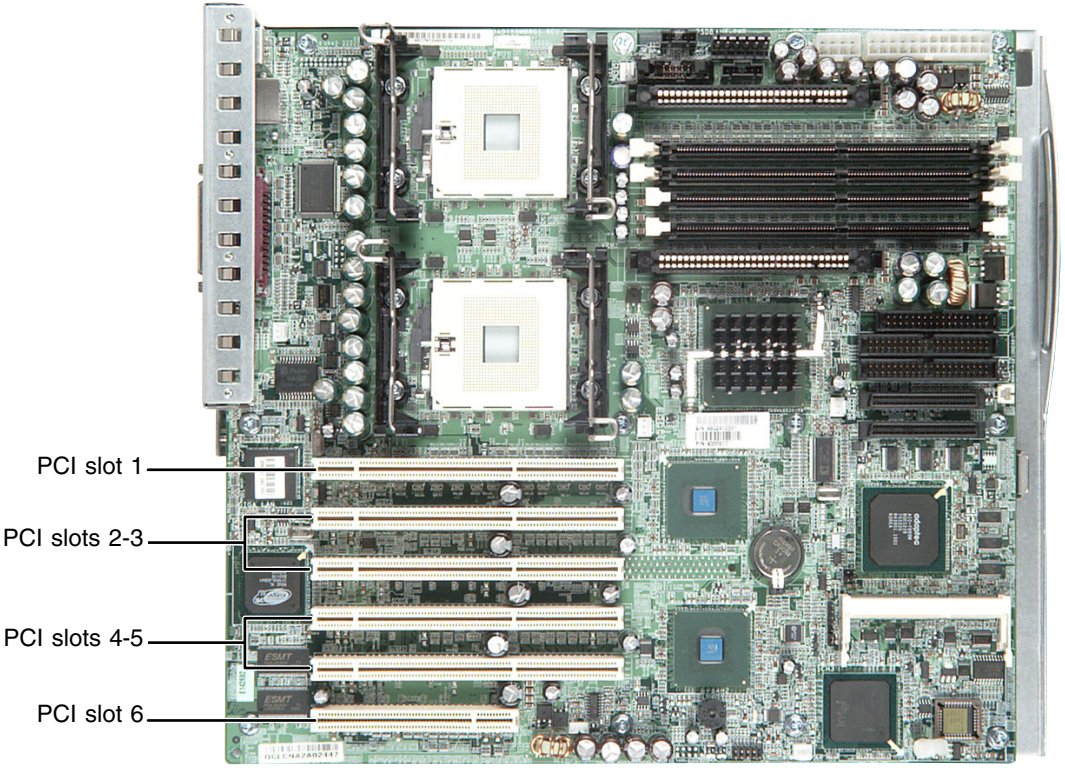
 - OR -

 Restart and open the BIOS Setup utility. Note the **System Memory** listed in the Main menu to verify the amount of memory installed.

Installing PCI expansion cards

Your server uses the PCI-X bus. Use the following chart to determine the PCI slot you should install your expansion card into.

PCI slot	Description
1	Always runs at 64-bit/66 MHz. Supports 32-bit and 64-bit cards, 3.3 V or universal.
2-3	Paired slots. When only one card is installed in a slot of this pair, the slot can run at 64-bit/133 MHz. When two 64-bit/100 MHz cards are installed in this pair, the slot can run at 64-bit/100 MHz. When cards of different speeds are installed in this pair, each slot runs at the slowest of the two speeds. Supports both 32-bit and 64-bit cards, 3.3 V or universal.
4-5	Same as slots 2-3.
6	Always runs at 32-bit/33 MHz. Supports 5 V or universal cards.

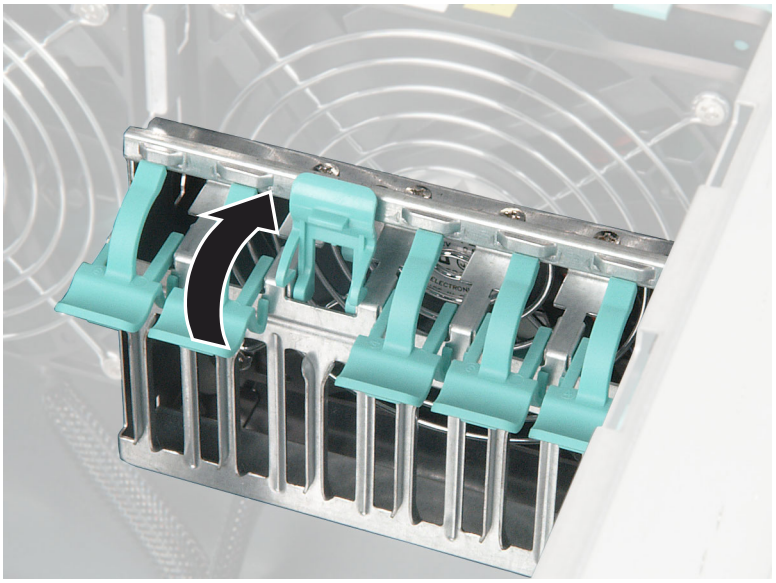


To replace, add, or reseat a PCI expansion card:

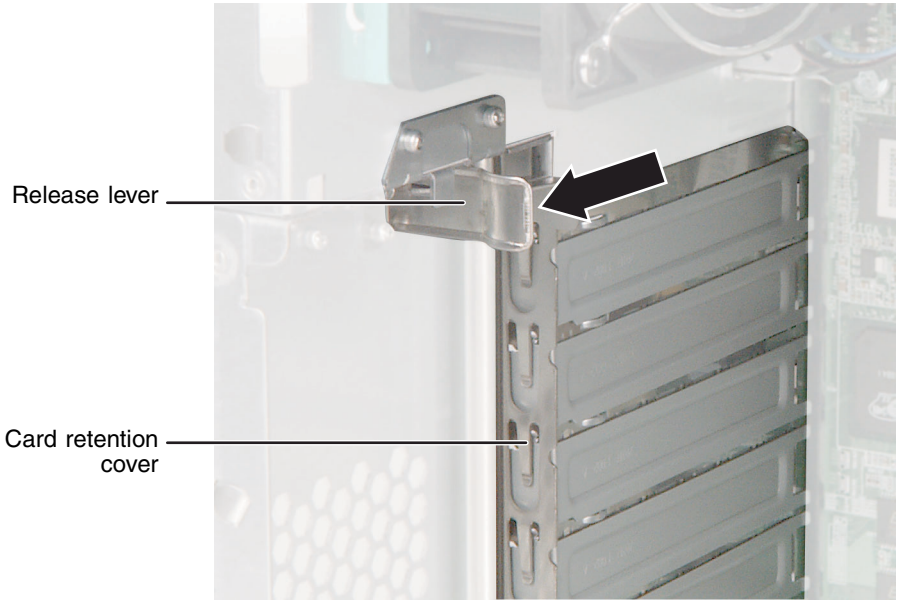
1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. If you are replacing a card, disconnect any cables that are attached to the old card.
4. If you are removing a full-length card, pull back on the card retention clip that secures the end of the card.

 - OR -

 If you are adding a full-length card to an empty expansion slot, pull back on the card retention clip for that slot.



5 Pull the card retention cover's release lever, then swing the retention cover away from the expansion cards.



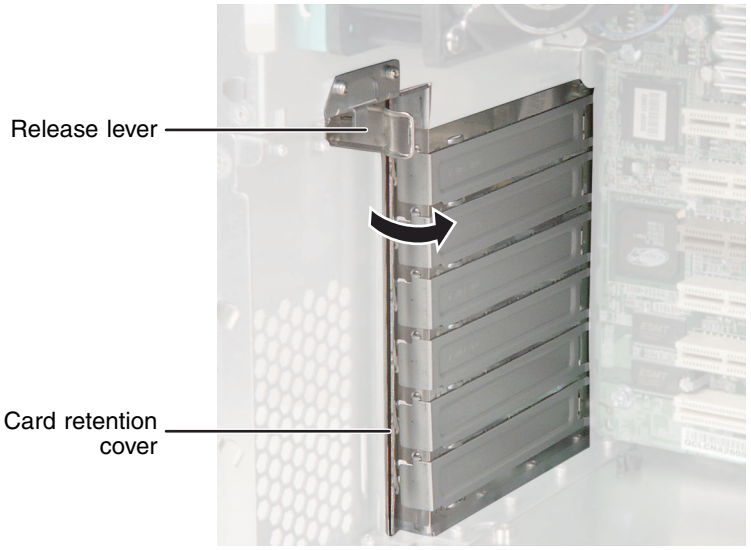
6 If you are replacing a card, remove the old expansion card. You can slightly seesaw the card end-to-end to loosen the card, but do not bend the card sideways.

Warning

Do not touch the contacts on the bottom part of the expansion card. Touching the contacts can cause electrostatic damage to the card.

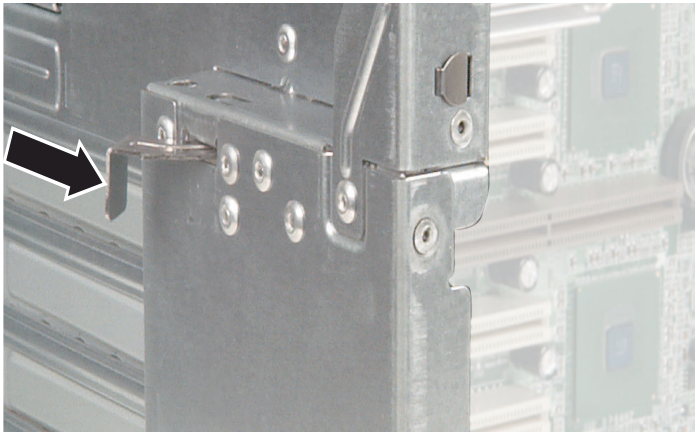
7 Press the new card into the expansion slot. You can slightly seesaw the card end-to-end to help insert the card, but do not bend the card sideways.

8 Push the card retention cover against the expansion cards until the retention cover clicks into place under the release lever.



- OR -

Press on the card retention cover lever on the back of the server until the lever is flush with the back of the case.



9 If you are installing a full-length card, press down on the card retention clip to secure the end of the card.

10 Connect any cables to the card following the instructions in the card documentation.

11 Follow the instructions in "Closing the server case" on page 45.

12 See the card's documentation for software installation instructions.



Installing a processor

The server is compatible with Intel® Xeon processors with 512 KB cache. The server automatically detects the processors each time you turn on the server. Whenever you install new processors, you should first install the most current version of the BIOS. For more information, see "Updating the BIOS" on page 89.

Important



You must have a processor in the upper (processor 1) slot, or your server will not start.

If you are upgrading your server from one processor to two, you may need to reconfigure your operating system so it can recognize the additional processor. For more information, see your operating system's documentation.

Warning



A heat sink must be installed on the processor. Installing a processor without a heat sink could damage the processor.

Warning



Processors and heat sinks may be hot if the computer has been running. Also, there may be sharp edges on the heat sinks. Consider wearing protective gloves.

To replace a processor:

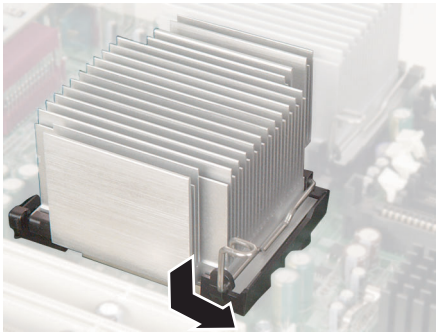
1. Install the most current BIOS version. For more information, see "Updating the BIOS" on page 89.
2. Follow the instructions in "Preventing static electricity discharge" on page 41.
3. Follow the instructions in "Opening the server case" on page 42.

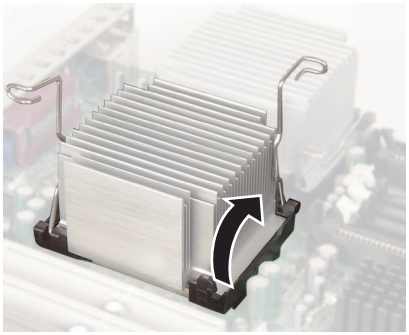
Tips & Tricks



To make removing the heat sinks easier, first remove the voltage regulators, PCI expansion cards, and rear fan. For more information, see "Installing a voltage regulator" on page 69, "Installing PCI expansion cards" on page 60, and "Replacing a fan" on page 82.

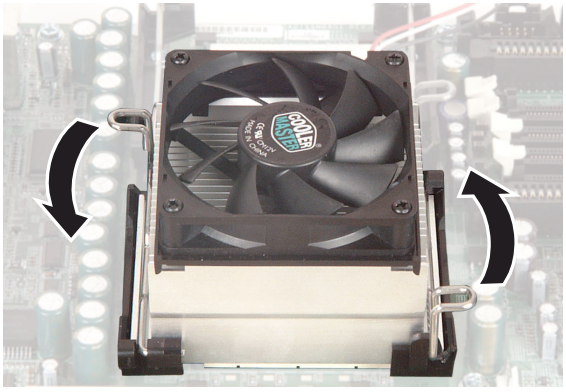
4 If your server has a passive heat sink, press down on the heat sink locking lever on each side, push them slightly away from the heat sink, then lift the levers out of the way.





- OR -

If your server has a heat sink with a fan, press down on the heat sink locking lever on each side, push them slightly away from the heat sink, then lift the levers out of the way. Unplug the heat sink's fan from its connector on the system board.

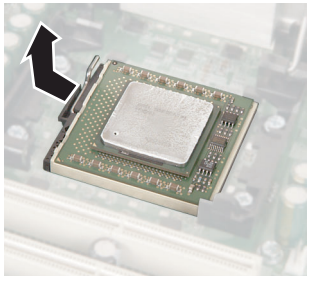


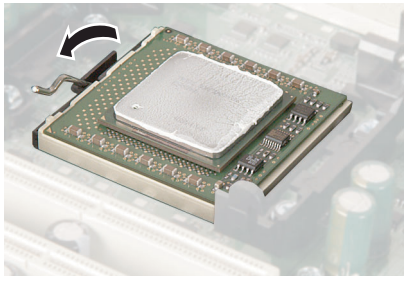
5 Remove the heat sink.

Important

The heat sink mounting paste may harden over time and hold the heat sink securely to the processor. If removing the heat sink also pulls the processor out of the processor socket, the processor should still be undamaged. Rotate the processor locking lever out of the way and continue with the procedure in Step 8.

6 Press down on the processor locking lever, push it slightly away from the processor, then rotate the lever a full 135° to release the processor.





7 Remove the old processor.

8 Install the new processor into the processor socket. Make sure that:

- The processor release lever is open all the way (135° from the closed position)
- The triangular arrow on the corner of the processor aligns with the triangular hole on the corner of the processor socket
- The processor is flush with the socket.

Important



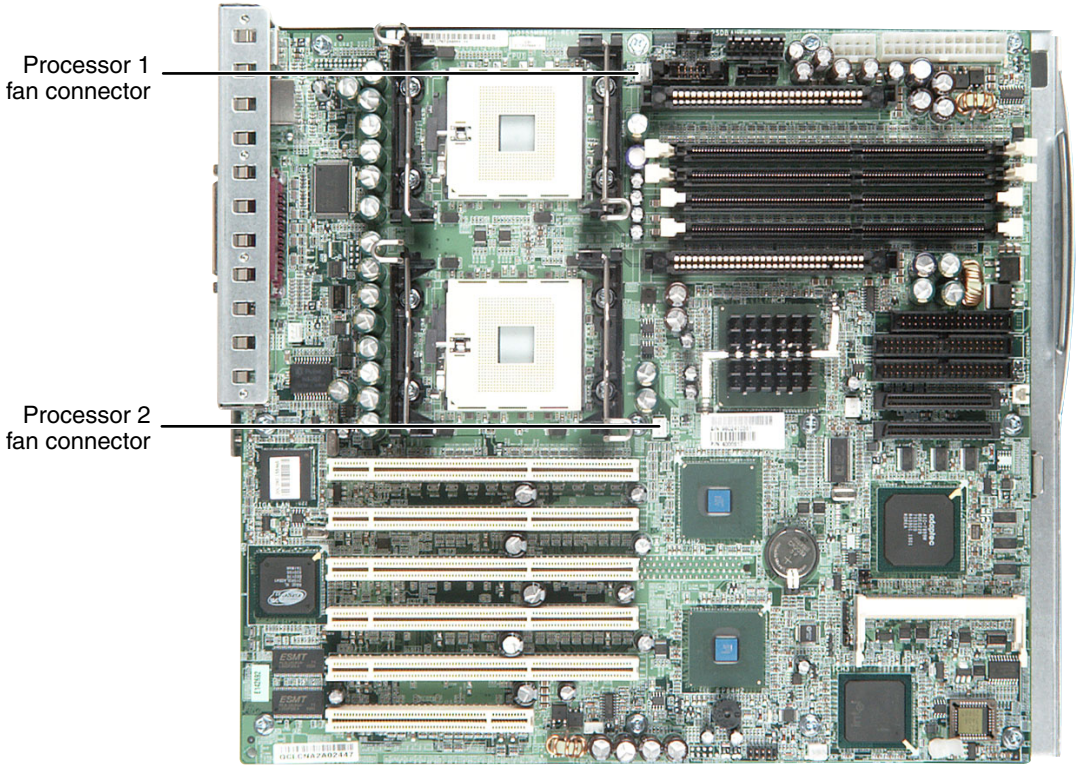
If you install two processors onto the system board, the processors can be different speeds. Both processors will run at the lower of the two speeds.

9 Press the processor locking lever down until it clicks into place.

10 Apply thermal grease to the top of the processor, if necessary.

11 Place the heat sink on the processor, then press the heat sink locking levers down until they click into place.

12 If your heat sink has a fan, plug the fan into the connector on the system board next to the heat sink.



13 If you have installed a new processor into the lower (processor 2) slot for the first time, you also need to install a voltage regulator for the processor. If you ordered the processor from Gateway, it came with a new voltage regulator. For instructions on installing a voltage regulator, see "Installing a voltage regulator" on page 69.

Warning

Only one voltage regulator should be installed for each processor.

14 Follow the instructions in "Closing the server case" on page 45.

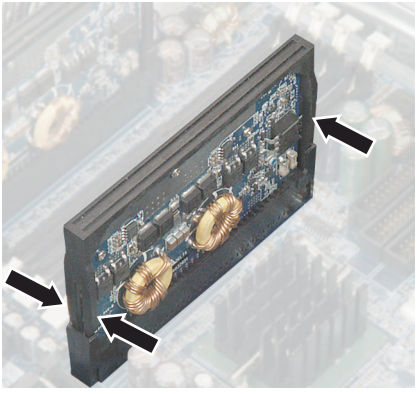
Installing a voltage regulator

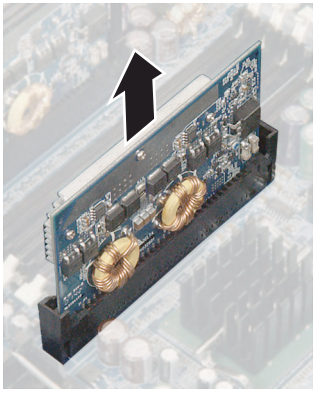
To install a voltage regulator:

1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. If you are installing a new voltage regulator, go to Step 5.

 - OR -

 If you are replacing a voltage regulator, on each end of the voltage regulator support bracket, pinch the sides together, then lift the bracket away from the server. You may need to first remove a heat sink or some memory modules in order to access the sides of the support bracket.





4. Lift the voltage regulator away from the system board.
5. Insert the new voltage regulator into the voltage regulator slot, then replace the support bracket.
6. If you removed a heat sink or some memory modules in Step 3, replace them.
7. Follow the instructions in "Closing the server case" on page 45.

Replacing the power supply

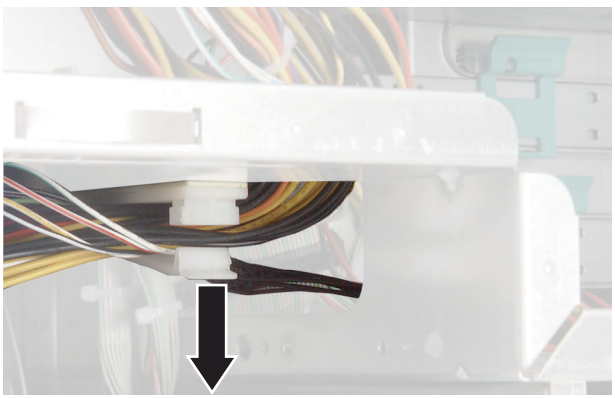
Warning

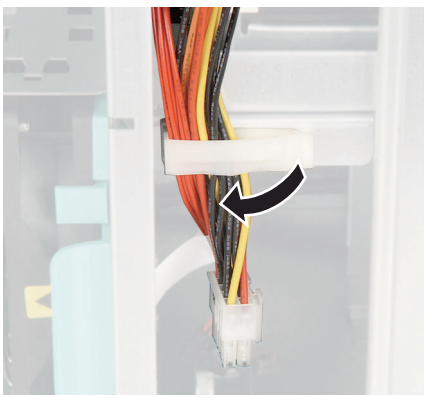
The power supply in this server contains no user-serviceable parts. Only a qualified computer technician should service the power supply.

Your server is supplied with a 3-wire AC power cord fitted with the correct plug style for your region. If this plug does not match the connector on your surge protector, UPS, or wall outlet, do not attempt to modify the plug in any way. Use a surge protector, UPS, or wall outlet that is appropriate for the supplied AC power cord.

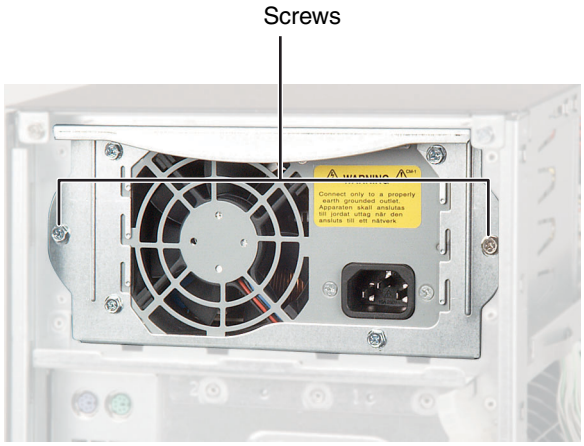
To replace the power supply:

1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. Follow the instructions in "Installing a voltage regulator" on page 69 to remove the upper voltage regulator module.
4. Disconnect the power supply cables from the system board, drives, and the hot-swap bay's SCSI backplane, noting their locations and orientation. (You will reconnect the cables after you install the new power supply.)
5. Open the cable clips by lifting the clip release tabs.



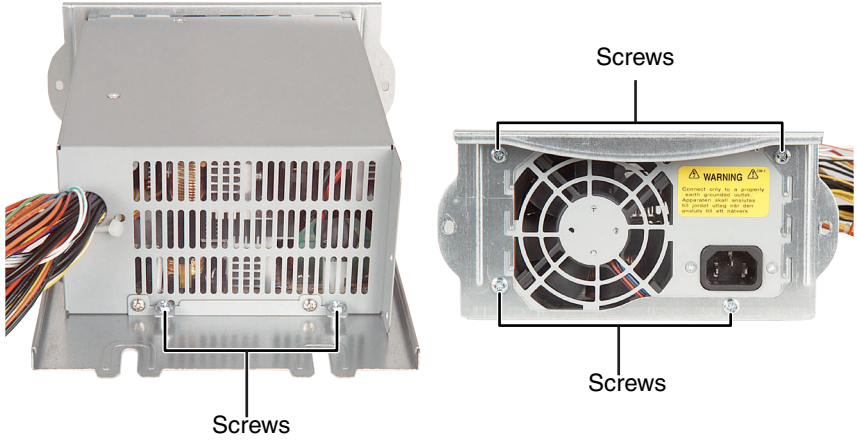


6 Remove the two screws that secure the power supply tray to the case.



7 Slide the power supply tray out of the case. Make sure that none of the power cables snag on server components.

8 Remove the two screws on the back and the four screws on the front of the power supply that secure it to the tray, then remove the power supply from the tray.



9 Secure the new power supply to the tray with the six screws you removed.



10 Insert the new power supply's cables into the case from the back, then slide the new power supply into the case.

11 Use the two screws you removed in Step 6 to secure the new power supply to the back of the server case.

12 Refer to the notes you made in Step 4 to reconnect all power cables to the system board, drives, and SCSI backplane.

13 Bundle the system board's power cables behind the cable clips, then press the clips closed.

14 Reinstall the upper voltage regulator module.

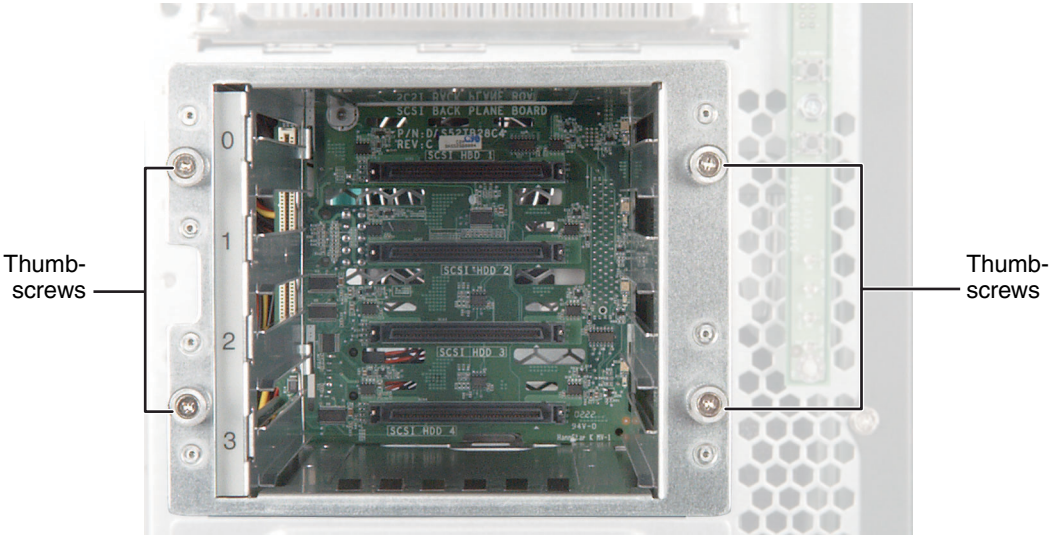
15 Follow the instructions in "Closing the server case" on page 45.

Replacing the SCSI backplane

Your server's hot-swap cage can hold four SCSI drives. The cage is connected to a SCSI backplane.

To replace the SCSI backplane:

1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. Remove the fan nearest the SCSI backplane. For instructions, see "Replacing a fan" on page 82.
4. Remove each of the drives from the hot-swap cage, noting the position of each drive. For instructions, see "Installing a hard drive" on page 55.
5. Loosen the four captive thumbscrews on the front of the hot-swap cage.



6 Slide the hot-swap cage out about two inches from the case.

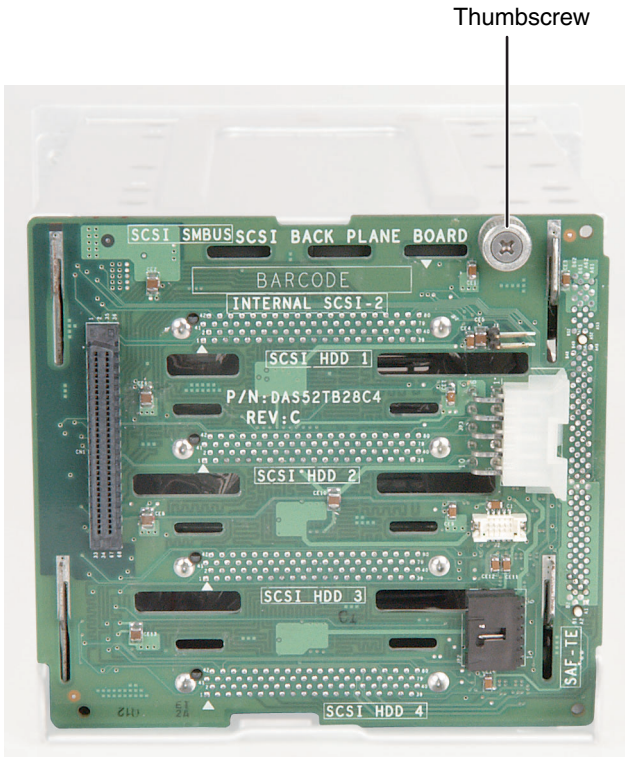


7 From inside the case, remove the power, SCSI, and manageability cables from the backplane. The manageability cable connector is visible after removing the SCSI and power cables.

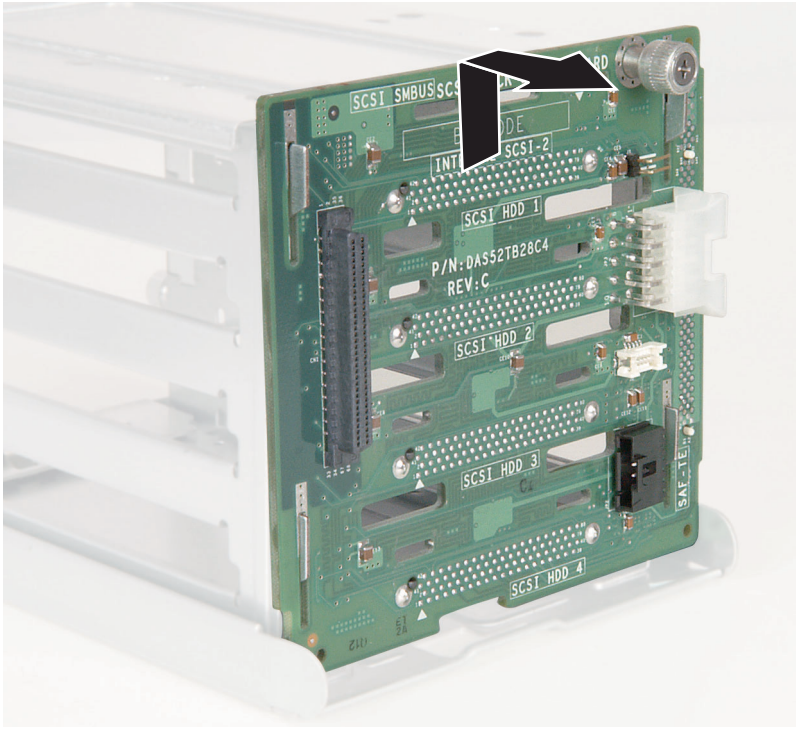


8 Remove the hot-swap cage completely from the server.

9 Loosen the captive thumbscrew that secures the backplane to the hot-swap cage.



10 Slide the backplane up slightly, then lift it away from the hot-swap cage.



11 Place the new backplane onto the hot-swap cage, then tighten the thumbscrew.

12 Slide the hot-swap cage part-way into the hot-swap bay. Make sure that the side of the cage marked “Top” is oriented toward the top of the server case.

13 Reconnect the power, SCSI, and manageability cables to the backplane.

14 Slide the hot-swap cage all the way into the hot-swap bay, then tighten the four thumbscrews.

15 Reinstall the fan.

16 Install each of the drives back into the hot-swap cage. Make sure that you replace the drives in the correct order by referring to your notes from Step 4.

17 Follow the instructions in "Closing the server case" on page 45.

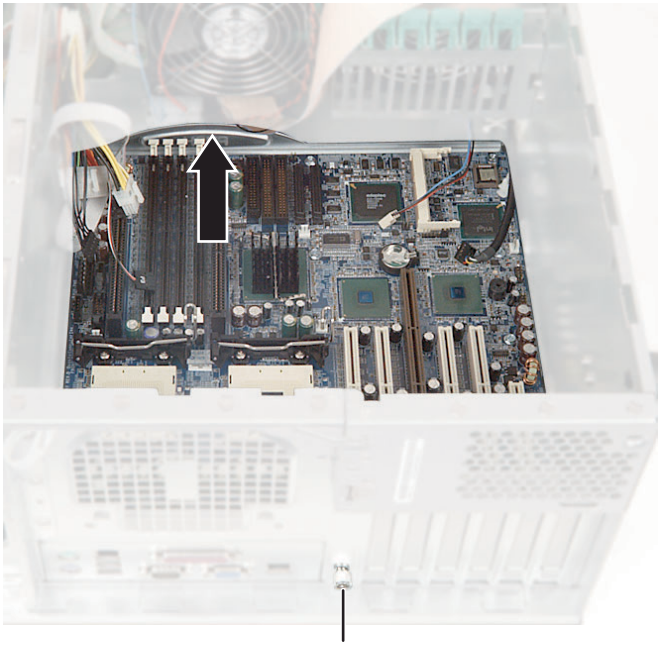


Replacing the system board

To replace the system board:

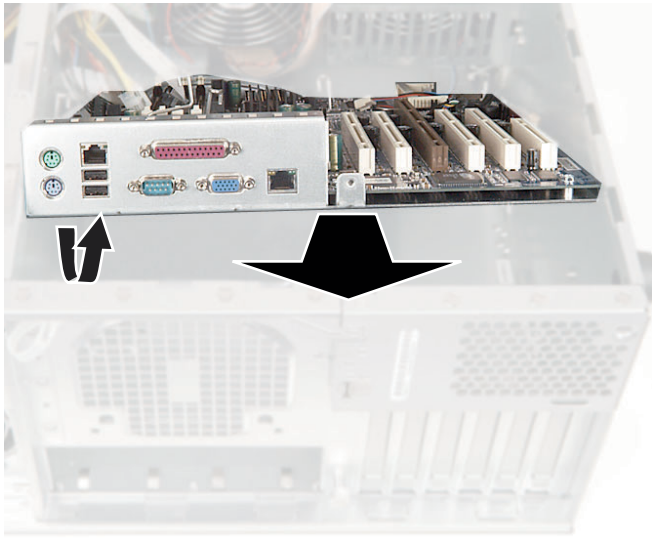
1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. To remove the memory modules, follow the instructions in "Installing memory" on page 58.
4. To remove all of the expansion cards, follow the instructions in "Installing PCI expansion cards" on page 60.
5. To remove the heat sinks and processors, follow the instructions in "Installing a processor" on page 65.
6. If your new system board does not include heat sink mounting brackets, remove the heat sink brackets from your old system board by removing the eight screws that secure them to the board.
7. To remove the voltage regulators, follow the instructions in "Installing a voltage regulator" on page 69.
8. Disconnect the power, data, and fan cables from the system board, noting their locations and orientation. (You will reconnect the cables after you install the new board.)
9. Remove the rear fan to provide more space for removing the system board. For more information, see "Replacing a fan" on page 82.

10 Remove the system board tray's thumbscrew on the back of the case.



11 Slide the tray toward the front of the case. If the tray is difficult to move, push on the rear port panel for added leverage.

12 Lift the tray away from the case.



13 Insert the new system board tray into the case, then slide the tray toward the back of the case.

14 Tighten the system board tray thumbscrew on the back of the case.

15 Reinstall the memory, processors, voltage regulators, and fans.

16 Connect the power, data, and fan cables by referring to the notes you took in Step 8.

17 To reinstall the expansion cards, follow the instructions in "Installing PCI expansion cards" on page 60.

18 Follow the instructions in "Closing the server case" on page 45.

19 Turn on your server.

20 Press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.

21 Check BIOS settings to make sure that they detect the server's new hardware, then save your changes (if any) and close the BIOS Setup utility.

Replacing a fan

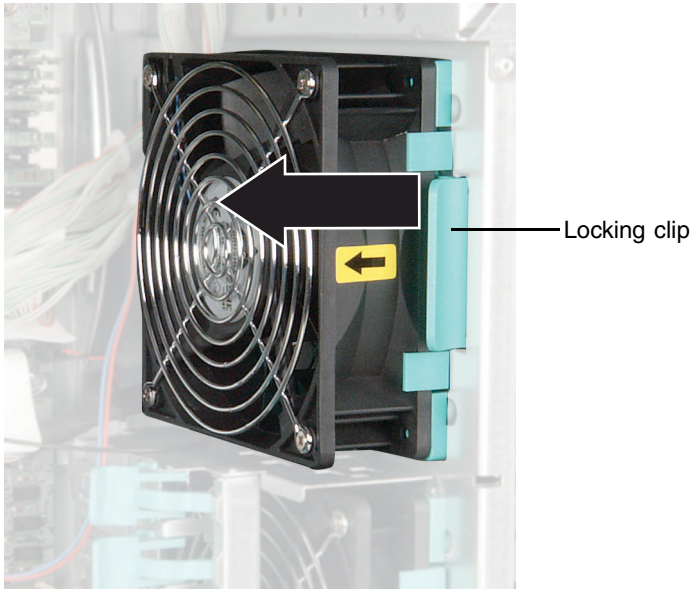
The pictures in this procedure show the hot-swap bay fan. All case fans can be replaced in the same manner.

Important

Make sure that you replace a fan with an identical replacement fan. The arrow on each fan indicates the direction of its air flow, and the arrow should point toward the rear of the case.

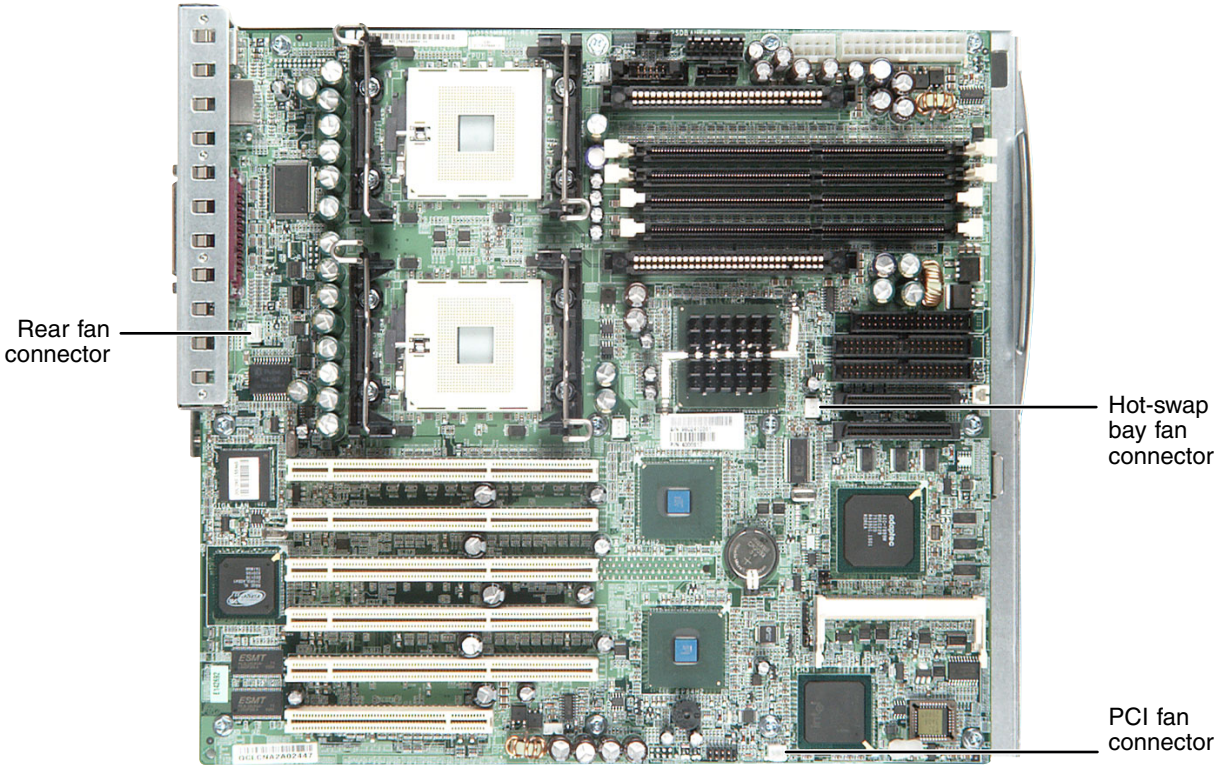
To replace a fan:

1. Follow the instructions in "Preventing static electricity discharge" on page 41.
2. Follow the instructions in "Opening the server case" on page 42.
3. Unplug the fan.
4. While pressing the locking clip, slide the fan away from the system board, then pull it away from the case.



5 Insert the new fan's mounting posts into the fan mounting slots, then slide the fan down until it snaps into place.

6 Reconnect the fan to the system board.



7 Follow the instructions in "Closing the server case" on page 45.

Replacing the CMOS battery

If the server clock does not keep time or the settings in the BIOS Setup utility are not saved when you turn off the server, replace the CMOS battery with an equivalent battery.

Warning

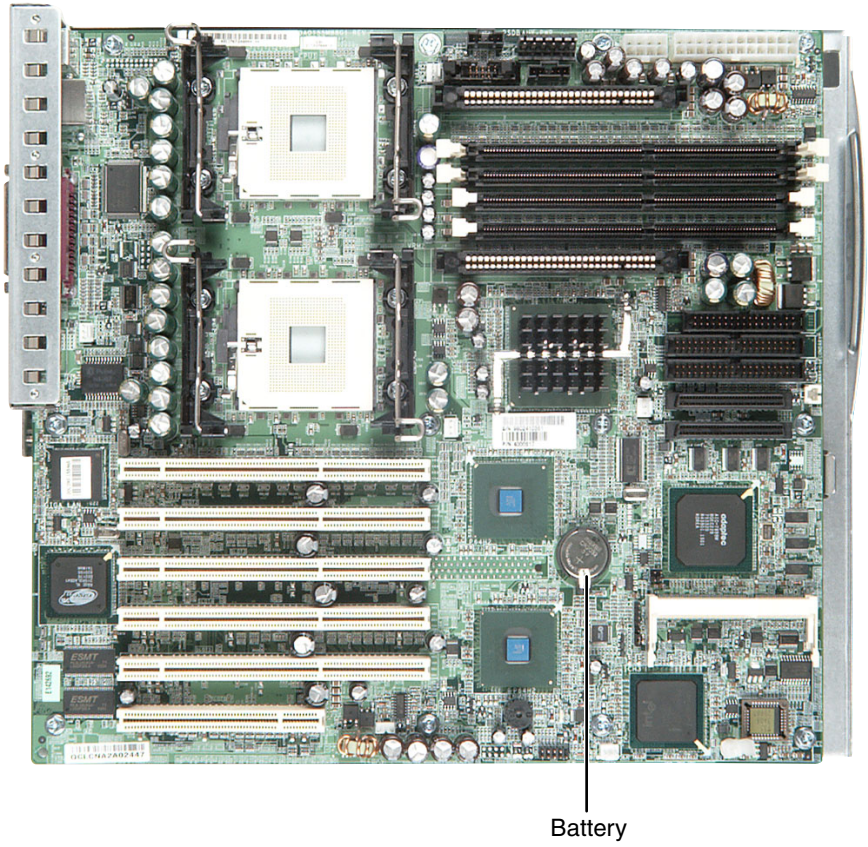


Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries following the manufacturer's instructions.

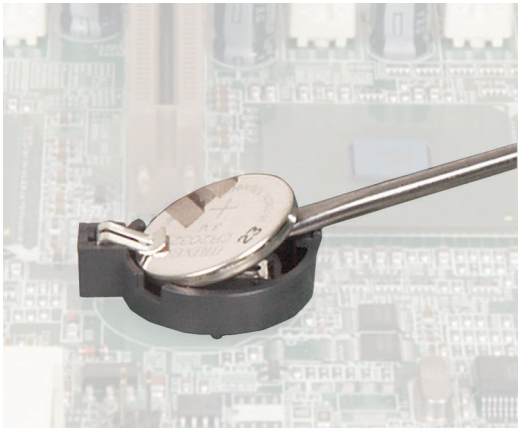
To replace the battery:

1. Print the appendix for BIOS Settings in this guide.
2. Open the BIOS Setup utility by following the instructions in "Opening the BIOS Setup utility" on page 88.
3. Record the BIOS settings on your printout, then close the utility. For more information, see "Recording your BIOS configuration" on page 35.
4. Turn off your server, then follow the instructions in "Preventing static electricity discharge" on page 41.
5. Follow the instructions in "Opening the server case" on page 42.

6 Locate the old battery on the system board and note its orientation. You will need to install the new battery the same way.



7 Push the battery retention clip away from the battery until the battery lifts up. You can use a screwdriver to help lift the battery.



8 Remove the old battery.

9 Make sure that the positive (+) side of the new battery is facing up, then press the new battery into the socket until it snaps into place.

10 Follow the instructions in "Closing the server case" on page 45.

11 Turn on the server.

12 Press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.

13 Restore any BIOS settings that you wrote down in Step 3.

14 Save all your settings and close the BIOS Setup utility.

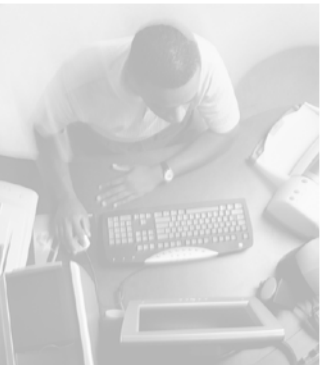


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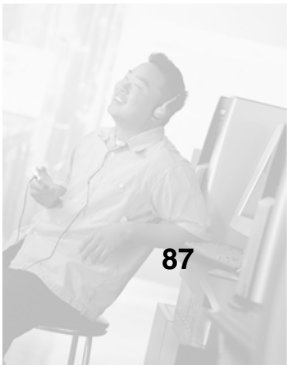
Using the BIOS Setup Utility

Read this chapter to learn how to:

- Open the BIOS Setup utility
- Update the BIOS
- Reset the BIOS settings to their factory defaults
- Reset the BIOS passwords







Opening the BIOS Setup utility

The BIOS Setup utility stores basic settings for your server. These settings include basic hardware configuration, resource settings, and password security. These settings are stored and saved even when the power is off.

Caution



The options in the BIOS Setup utility have been set at the factory for optimal performance. Changes to these settings will affect the performance of your server.

Before changing any settings, write them down in case you need to restore them later. You can record the settings on a printout of this guide's appendix for BIOS Settings.

To open the BIOS Setup utility:

1. Restart your server.
2. Press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.

 When you select menu items, the Item Specific Help box on the right side of the screen displays specific information about the selection. The command bar across the bottom of the screen shows the keys you press to access help, navigate through the menus, and perform other tasks.
3. Select one of these menus:

 - **Main** gives you access to basic information and settings related to your server's hardware and configuration.
 - **Advanced** gives you access to information and settings for system resources, hardware, and server's configuration.
 - **Power** gives you access to settings that control your server's power management features.
 - **Boot** gives you access to information and settings for startup features and startup sequences.
 - **Security** gives you access to settings related to system access passwords. For more information, see "Server security" on page 36.
 - **Exit** gives you access to options for closing the BIOS Setup utility.

Updating the BIOS

If you need a new version of the BIOS, you can download the BIOS update from Gateway, then install the new version from a diskette.

To update the BIOS:

1. Print the appendix for BIOS Settings in this guide.
2. Download the BIOS update from support.gateway.com.
3. Restart your server, then press **F2** when the Gateway logo screen appears during startup.
4. Record any custom BIOS settings on your printout.
5. Follow the instructions in the self-extracting BIOS update file.
6. Enter any custom BIOS settings you recorded in Step 4, then save your changes and close the BIOS Setup utility.

Recovering the BIOS

If you encounter a problem while you are updating the BIOS, such as a power outage, the BIOS update may not be successful. You can recover the old BIOS so you can try another update.

To recover the old BIOS:

1. Turn on or restart the server.
2. Press and hold **CTRL+HOME**. The old BIOS is recovered.

Resetting the BIOS

The Clear BIOS jumper on the system board lets you clear all BIOS Setup settings and return them to the factory defaults.

To reset the BIOS:

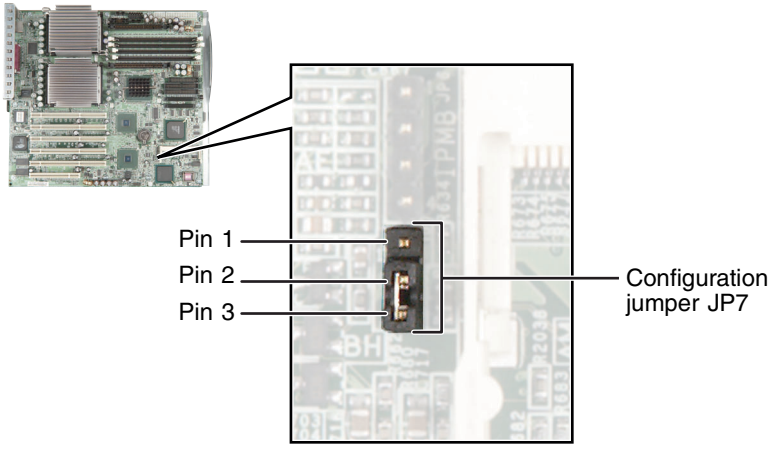
1. Print the appendix for BIOS Settings in this guide.
2. Restart your server.
3. Press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
4. Record any custom BIOS settings on your printout.
5. Follow the instructions in "Preventing static electricity discharge" on page 41.
6. Turn off the server, then disconnect the power cord and all other cables connected to the server.
7. Remove the side panel. For more information, see "Opening the server case" on page 42.

Warning



Moving the jumper while the power is on can damage your server. Always turn off the server and unplug the power before changing the jumper.

8 Remove the jumper across pins 2-3 of jumper JP7, then place the jumper across pins 1-2. The BIOS memory is cleared.



9 Place the jumper back onto pins 2-3.

10 Close the case by following the instructions in "Closing the server case" on page 45.

11 Turn on the server. A message appears saying that the CMOS Date and Time are not set.

12 Press **F1** to reset the BIOS to factory default settings.

Resetting BIOS passwords

To reset BIOS passwords, you must reset and clear all BIOS settings. To reset BIOS passwords, follow the instructions in "Resetting the BIOS" on page 90.

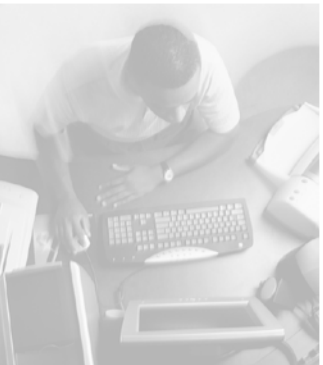


6 Troubleshooting

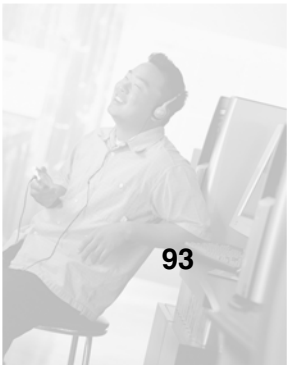
Read this chapter to learn how to:

- Interpret error messages and codes
- Troubleshoot
- Get telephone support and training

If the suggestions in this chapter do not correct the problem, see "Telephone support" on page 117 for more information about how to get help.







Safety guidelines

While troubleshooting your server, follow these safety guidelines:

- Never remove the side panel while your server is turned on and while the modem cable and the power cord are connected.
- Do not attempt to open the monitor. To do so is extremely dangerous. Even if the power is disconnected, energy stored in the monitor components can be dangerous. Also, opening the monitor voids the warranty.
- Make sure that you are grounded correctly before opening the server case. For more information about preventing damage from static electricity, see "Preventing static electricity discharge" on page 41.
- After you complete any maintenance task where you have to open the server case, make sure that you close the case, reinstall any screws, then reconnect all cables before you restart your server.

Warning



To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- Power cords or plugs are damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician. If your server was damaged during shipment from Gateway, contact Gateway Technical Support.

Error messages

These messages often indicate procedural errors such as typing an incorrect keystroke or trying to save a file to a write-protected diskette. Some messages, however, may indicate a problem that requires further troubleshooting.

Access denied

- Your diskette is write-protected. Move the write-protection tab over the window on the back of the diskette, or save to a new diskette.

Bad command or file name

- Make sure that you entered the right command.
- Make sure that the specified drive is correct, then try again.
- If you are trying to exit MS-DOS to return to Windows, type **exit**, then press ENTER.

Base memory [xxx] expansion

- This is an informational message only. No action is required.

CD drive is not recognized

- See "Your server does not recognize a CD or the CD drive" on page 102 for a possible solution.

Data error

- In Windows 2000 Server, run CheckDisk on the drive with the error.

Diskette drive 0 seek to track 0 failed

- Open the BIOS Setup utility, then make sure that the drive settings are correct.
- Check the diskette drive cables. Make sure that Pin 1 on the cable aligns with Pin 1 on the connector.

Diskette drive reset failed

- Open the BIOS Setup utility, then make sure that the drive settings are correct.
- Check the diskette drive cables. Make sure that Pin 1 on the cable aligns with Pin 1 on the connector.

Diskette read failed - press F1 to retry boot

- Make sure that the startup diskette contains the **command.com** file.
- Open the BIOS Setup utility, then make sure that your drive or controller is configured correctly.
- Press **F1** to restart the server.
- Make sure that the diskette drive cable is connected securely.

Error loading operating system

- The master boot record may be corrupt. For troubleshooting information, see "The master boot record is corrupted" on page 106.

Hard disk controller failure

- Make sure that the hard drive cable is connected securely.
- Open the BIOS Setup utility, then make sure that the correct drive type is selected.

Hard disk controller failure - press F1 to try reboot

- The drive controller may be defective. Press **F1** to try to restart the server. Try running FDISK and DOS Format to check the integrity of the hard drive. For more information, see your operating system's documentation.
- See "You need to troubleshoot an IDE hard drive" on page 107.

Insert bootable media device

- Make sure that the correct hard drive is set as the first bootable drive in the Boot menu of the BIOS Setup utility.
- See "Your server does not recognize an IDE drive" on page 106 or "Your server does not recognize a SCSI drive" on page 106 for a possible solution.

Insufficient disk space

- Check the free space on the drive. If the drive is almost full, remove unnecessary files. For more information, see "Using Disk Cleanup" on page 24.

Invalid configuration information

- Open the BIOS Setup utility, then make sure that the settings are correct.
- Reset the BIOS. For more information, see "Resetting the BIOS" on page 90.

Invalid partition table

- The master boot record may be corrupt. For troubleshooting information, see "The master boot record is corrupted" on page 106.

Invalid password

- Enter your password again. Some passwords are case sensitive.
- If you do not know the password, you may need to reinstall the software you are trying to access.
- Startup passwords are stored in BIOS. If this password has been set and you do not know it, you may be able to reset the password through system board jumper settings. For more information, see "Resetting BIOS passwords" on page 91.

Keyboard not detected

- See "The keyboard does not work" on page 108 for a possible solution.
- Turn off the server, then check the keyboard cable.

Keyboard stuck key failure

- Remove any objects that may be resting on the keyboard, then restart the server.
- Make sure that a key is not stuck. Clean the keyboard if necessary.

Memory errors were detected while the system started up

- See "Memory errors were detected during server start up" on page 109 for a possible solution.

Memory size error

- Open the BIOS Setup utility, then save the memory configuration.

Missing operating system

- The master boot record may be corrupt. For troubleshooting information, see "The master boot record is corrupted" on page 106.
- Use FDISK to make sure that your hard drive has an active partition. On FDISK's main menu, select the Set Active Partition option. In MS-DOS or Windows 95, the only partition that can be set as active is the primary DOS partition.

Non-system disk or disk error

- Eject the diskette, then press ENTER.
- If the diskette is bootable, check it for errors with an error-checking program.
- For troubleshooting information, see "You need to troubleshoot an IDE hard drive" on page 107.

Not enough memory

- Close all programs that are not currently in use.

Required parameter missing

- Make sure that you entered the right command.
- If you are trying to exit DOS to return to Windows, type **exit**, then press ENTER.

Syntax error

- Make sure that you entered the right command.
- If you are trying to exit DOS to return to Windows, type **exit**, then press ENTER.

System Event Log Full

- Clear the event log. To clear or view the event log, open the BIOS Setup utility, select the **Advanced** menu, then select the **Event Log Control** menu. For information on opening the BIOS Setup utility, see "Opening the BIOS Setup utility" on page 88.

Time and date not set

- Open the BIOS Setup utility, then set the computer date and time.

Write-protect error

- Your diskette is write-protected. Move the write-protection tab over the window on the back of the diskette.

Troubleshooting

First steps

Try these steps first before going to the following sections:

- Make sure that the power cord is connected to your server and an AC outlet and that the AC outlet is supplying power.
- If you use a surge protector or a UPS, make sure that it is turned on and is rated to handle the power required by your server.
- If a peripheral device, such as the keyboard or mouse, does not work, make sure that all connections are secure and plugged into the correct ports.
- If you added or removed server components before the problem started, review the installation procedures you performed and make sure that you followed each instruction. You may need to remove the device, uninstall the device's software, then reinstall the device.
- Make sure that your hard drive is not full. For more information, see "Managing hard drive space" on page 23.
- If an error message appears on the screen, write down the exact message. The message may help Gateway Technical Support in diagnosing and fixing the problem.
- Open the BIOS Setup utility and check your configuration settings. For more information, see "Opening the BIOS Setup utility" on page 88.
- View the system event log. To view the log, in the BIOS Setup utility select the **Advanced** menu, then **Event Log control**, then **View Event Log**.
- If an error occurs in a program, see its documentation or online help.

Warning



To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- Power cords or plugs are damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician.

Battery replacement

If you have problems after installing a new CMOS battery, try each of the following items, closing the case and restarting the server after each try:

- Turn off the server and make sure that all exterior cables are attached and secured to the correct connectors.
- Make sure that all power switches are on. If the server is plugged into a surge protector or UPS, make sure that it is turned on.
- Open the BIOS Setup utility and compare the settings on the screen with your notes, then correct any discrepancies.
- Remove the side panel by following the instructions in "Opening the server case" on page 42, then make sure that all cables inside the case are attached securely. Also, make sure that the colored cable edges are aligned correctly and that the connectors do not miss any pins.

Warning



To avoid bodily injury, do not attempt to troubleshoot your server problem if:

- Power cords or plugs are damaged
- Liquid has been spilled into your server
- Your server was dropped
- The case was damaged

Instead, unplug your server and contact a qualified computer technician.

- If you have the proper test equipment, make sure that the new battery has power. Although unlikely, your new battery may be defective.

Beep codes

Whenever a recoverable error occurs during the power-on self-test (POST), the BIOS displays an error message that describes the problem. The BIOS also sounds a beep code (one long tone followed by two short tones) during POST if the video configuration fails (a faulty video controller) or if an expansion card is not functioning correctly.

A PCI expansion card (for example, a RAID controller) can also issue audible errors by itself, usually consisting of one long tone followed by a series of short tones. For more information on the beep codes issued, check the documentation for that device.

Several POST routines issue a POST terminal error and shut down the system when they fail. Before shutting down the system, the terminal error handler sounds a beep code (one long tone and a series of short tones) that identifies the test point error. If POST completes normally, the BIOS issues one short beep before passing control to the operating system.

Beeps	Description	Troubleshooting steps
1	Refresh failure. The memory refresh circuitry on the system board is faulty.	Reseat the memory or replace with known good modules.
2	Parity error. Parity error in the first 64 KB of memory.	Same as for 1 beep.
3	Memory failure in first 64 KB.	Same as for 1 beep.
4	Memory failure in first 64 KB of memory, or Timer 1 on the system board is not functioning.	Remove all expansion cards. ▪ If the beep codes occur even when all expansion cards have been removed, the system board is at fault. ▪ If the beep codes do not occur when the expansion cards have been removed, one of the cards is causing the problem. Install the cards one at a time until the problem happens again. When the beep codes return, the most recent card you installed is at fault.
5	The processor on the system board generated an error.	Same as for 4 beeps.
6	The keyboard controller (8042) may be defective. The BIOS cannot switch to Protected mode.	Same as for 4 beeps.
7	The processor generated an exception interrupt.	Same as for 4 beeps.
8	The server video's memory is faulty. This is not a fatal error.	The system board may be faulty.
9	The ROM checksum value does not match the value encoded in the BIOS.	Same as for 4 beeps.

Beeps	Description	Troubleshooting steps
10	The shutdown register for CMOS RAM failed.	Same as for 4 beeps.
11	The external cache is faulty.	Same as for 4 beeps.

BIOS

The settings in the BIOS Setup utility are not retained

- Replace the CMOS battery. For more information, see "Replacing the CMOS battery" on page 84.

CD drive

Your server does not recognize a CD or the CD drive

- Make sure that the CD label is facing up, then try again.
- Try a different CD. Occasionally CDs are flawed or become scratched and cannot be read by the CD drive.
- Shut down and restart your server.
- Clean the CD. For more information, see "Cleaning CDs" on page 103.
- Restart your server, then open the BIOS Setup utility by pressing and holding **F2** while your server restarts. Make sure that the IDE controllers are enabled. For more information, see "Using the BIOS Setup Utility" on page 87.
- Make sure that the drive is configured correctly by following the instructions in the drive's documentation.
- Open your server case and make sure that the cables are connected correctly to the CD drive and the IDE connector on the system board or controller card.
- If you have a SCSI device in your system, check the cable connected to the SCSI card. If the CD drive is the last drive on the cable (the drive farthest from the card), make sure that the CD drive is terminated. For more information about SCSI device configurations, see the drive's documentation.
- Reinstall the device driver. For more information, see *Using Your Server Companion CD*.

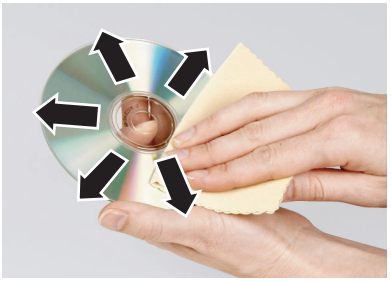
Your CD drive tray does not open

- Press a straightened paper clip wire into the CD drive's manual eject hole. The drive tray opens.
- If this problem happens frequently while the server is turned on, the drive may be defective.

Cleaning CDs

Clean CDs by wiping from the center to the edge, not around in a circle, using a product, such as a soft cloth, made especially for cleaning CDs.





Diskette drive

The diskette drive is not recognized

- Restart your server.
- Open your server case and make sure that the cables are connected correctly to the diskette drive and the system board. The red-striped edge of the data ribbon cable indicates Pin 1 and corresponds with Pin 1 on the diskette drive (typically on the side farthest from the power supply connection). If necessary, reverse one end of the cable so the red-striped edge of the data ribbon cable faces Pin 1 on the diskette drive. Make sure that the pins are not bent or misaligned. For more information, see "Installing a media drive" on page 48.

You cannot save a file to diskette or you get the message "disk is full or write-protected"

- Make sure that the write-protection tab on the upper-right corner of the diskette is down (unprotected).
- Make sure that the diskette is formatted.

- Delete unnecessary files on the diskette and try again.
- Try a different diskette. Occasionally diskettes are flawed and cannot be read by the diskette drive.
- Run error-checking on the diskette. For more information, see "Checking the hard drive for errors" on page 24. If errors are detected and corrected, try using the diskette again.

The diskette drive LED is lit continuously

- Remove the diskette from the drive. If the light stays on, try restarting your server.
- Open your server and make sure that the cables are connected correctly to the diskette drive and the system board. The red-striped edge of the data ribbon cable indicates Pin 1 and corresponds with Pin 1 on the diskette drive (typically on the side farthest from the power supply connection). If necessary, reverse one end of the cable so the red-striped edge of the data ribbon cable faces Pin 1 on the diskette drive. Make sure that the pins are not bent or misaligned. For more information, see "Installing a media drive" on page 48.

Expansion cards

Your server does not recognize an expansion card

- Restart your server.
- Make sure that you have installed the necessary software or driver. For more information, see the card's documentation.
- Reseat the card. For more information, see "Installing PCI expansion cards" on page 60.
- Install the card in a different slot.

File management

A file was accidentally deleted

If the file was deleted at a DOS prompt or if you deleted a file in Windows 2000 Server while holding down the SHIFT key, the file cannot be restored.

To restore files that were deleted in Windows 2000 Server:

1 Double-click the **Recycle Bin** icon.

2 Right-click the file you want to restore, then click **Restore**.

Hard drive

You receive an "Insufficient disk space" error message

- In Windows 2000 Server, delete unnecessary files from the disk using Disk Cleanup. For more information, see "Using Disk Cleanup" on page 24.
- In Windows 2000 Server, empty the Recycle Bin by right-clicking the **Recycle Bin** icon, then clicking **Empty Recycle Bin**.
- Save your files to a diskette or another drive. If the hard drive is full, copy any files not regularly used to diskettes or other backup media, then delete them from the hard drive.

The hard drive cannot be accessed, or you receive a "General failure reading drive C" error message

- If a diskette is in the diskette drive, eject it and restart your server.
- Try restarting your server by pressing CTRL+ALT+DEL.
- Open your server and make sure that the cables are connected correctly to the hard drive and the system board. For more information, see "Installing a hard drive" on page 55.
- If your server has been subjected to static electricity or physical shock, you may need to reinstall the operating system.
- Use GWScan to test the hard drive. For more information, see "You need to troubleshoot an IDE hard drive" on page 107.

You receive a "Non-system disk" or "disk error" error message

- Eject the diskette from the diskette drive, then press ENTER.
- Use FDISK to make sure that your hard drive has an active partition. For more information, see "The master boot record is corrupted" on page 106.

Your server does not recognize an IDE drive

- Make sure that the IDE connectors are enabled in the BIOS Setup utility. To open the BIOS Setup utility, restart your server, then press and hold **F2** while your server restarts. For more information, see "Using the BIOS Setup Utility" on page 87.
- Reinstall the device driver. For more information, see *Using Your Server Companion CD*.
- Open your server and make sure that the IDE cable is connected to both the system board IDE connector and the hard drive connector. For more information, see "Installing Components" on page 39.
- Use GWScan to test the hard drive. For more information, see "You need to troubleshoot an IDE hard drive" on page 107.

Your server does not recognize a SCSI drive

- Reinstall the device driver. For more information, see *Using Your Server Companion CD*.
- Open your server and reseat the drive controller card. Also make sure that the controller card and power cables are connected to the drive. For more information, see "Installing Components" on page 39 or your controller card's documentation.
- Make sure that the power cable and SCSI cable are attached securely to the drive.
- Use a different SCSI cable.
- Make sure that the last device on the SCSI cable is correctly terminated. For more information about SCSI device configurations, see the device's documentation.
- Change the drive's SCSI address to one that is not being used by your server. For more information about SCSI device configurations, see your drive's documentation.
- Make sure that the SCSI controller is enabled in the BIOS Setup utility.
- Run SCSI Verify in the SCSI BIOS. For more information about the SCSI BIOS, see the SCSI controller's documentation.

The master boot record is corrupted

- Repair the master boot record using FDISK from MS-DOS version 5.0 or later. To prepare startup diskettes, see "Creating startup diskettes" on page 32.

To repair the master boot record:

- At a DOS command prompt, type **fdisk/mbr**, then press ENTER.

You need to troubleshoot an IDE hard drive

- Use the GWScan utility to test a hard drive's ability to read data and to measure seek times and transfer rates. GWScan can also repair some errors that may develop on IDE hard drives.

To download the GWScan utility:

- Search for the utility at support.gateway.com. For information about how to use GWScan, go to: ftp://ftp.gateway.com/pub/hardware_support/drivers/win3.x_and_dos/mass_storage/hard_drives/7510801.txt

Internet

You cannot connect to the Internet

- If you are using a telephone line to access the Internet, make sure that your server is connected to the telephone line and the telephone line has a dial tone.
- If you are using a telephone line to access the Internet, make sure that no one else in the business is using the telephone line.
- If you are using a telephone line to access the Internet and you have the call waiting feature on your telephone line, make sure that it is disabled.
- Make sure that your account with your Internet Service Provider (ISP) is set up correctly. Contact your ISP technical support for help.
- Make sure that you do not have a problem with your modem. For more information, see "Modem (telephone dial-up)" on page 109.

You receive an "Unable to locate host" message and are unable to browse the Internet

This problem can occur when you have typed a URL (Web address) incorrectly, lost your Internet connection, or your ISP is having technical difficulties.

Re-type the URL or try a different URL. If the error message still appears, disconnect from the ISP connection and close your browser, then reconnect and open the browser. If you still get the error, your ISP may be having technical difficulties.

Connecting to a Web site takes too long

Many factors can affect Internet performance:

- Condition of the telephone lines in your business
- Condition of the telephone lines and switches at your local telephone service
- Condition of the Internet computers to which you connect and the number of users accessing those computers
- Complexity of graphics and multimedia on Web pages
- Having multiple Web browsers open, performing multiple downloads, and having multiple programs open on your server

Keyboard

The keyboard does not work

- Make sure that the keyboard cable is plugged into the correct port.
- Remove all extension cables and switchboxes.
- Clean the keyboard by using an aerosol can of air with a narrow, straw-like extension to remove dust and lint trapped under the keys.
- Try a keyboard that you know works to make sure that the keyboard port works.
- Reinstall the keyboard device driver. For more information, see *Using Your Server Companion CD*.

A keyboard character keeps repeating

- Make sure that nothing is resting on the keyboard.
- Make sure that a key is not stuck. Press each key to loosen a key that might be stuck, then restart your server.

Liquid has been spilled into the keyboard

- If you spilled liquid in the keyboard, turn off your server and unplug the keyboard. Clean the keyboard and turn it upside down to drain it. Let the keyboard dry before using it again. If the keyboard does not work after it dries, you may need to replace it. This type of damage is not covered by your server's warranty.

Memory

Memory errors were detected during server start up

- Open your server and make sure that the memory modules are installed correctly. For more information, see "Installing memory" on page 58.
- A memory module may be defective. If possible, try another memory module and see if the error repeats.

Modem (telephone dial-up)

Your modem does not dial or does not connect

- Make sure that your server is connected to the telephone line and the telephone line has a dial tone.
- Make sure that the modem cable is less than 6 feet (1.8 meters) long.
- Remove any line splitters or surge protectors from your telephone line, then check for a dial tone by plugging a working telephone into the telephone jack.
- If you have additional telephone services such as call waiting, call messaging, or voice mail, make sure that all messages are cleared and call waiting is disabled before using the modem. Contact your telephone service to get the correct code to temporarily disable the service. Also make sure that the modem dialing properties are set correctly.

To check the dialing properties in Windows 2000 Server:

1. Click **Start**, **Settings**, then click **Control Panel**. The *Control Panel* window opens.
2. Double-click the **Modems** icon, then click **Dialing Properties**. The *Dialing Properties* dialog box opens.
3. Make sure that all settings are correct.

- Make sure that you are not using a digital, rollover, or PBX line. These lines do not work with your modem.

- Check for line noise (scratchy, crackling, or popping sounds). Line noise is a common problem that can cause the modem to connect at a slower rate, abort downloads, or even disconnect. The faster the modem, the less line noise it can tolerate and still work correctly.

 Listen to the line using your telephone. Dial a single number (such as 1). When the dial tone stops, listen for line noise. Wiggle the modem cable to see if that makes a difference. Make sure that the connectors are free from corrosion and all screws in the wall or telephone jack are secure.

 You can also call your telephone service and have your telephone line checked for noise or low line levels.

- Try another telephone line (either a different telephone number in your business or a telephone line at a different location). If you can connect on this line, call your telephone service.
- Try connecting with the modem at a lower connection speed. If reducing the connection speed lets you connect, contact your telephone service. The telephone line may be too noisy.

You cannot connect to the Internet

- The ISP may be having technical difficulties. Contact your ISP technical support for help.
- Try a different communications program. The problem may be with just one program.

Your 56K modem does not connect at 56K

Current FCC regulations restrict actual data transfer rates over public telephone lines to 53K. Other factors, such as line noise, telephone service provider equipment, or ISP limitations, may lower the speed even further.

If your system has a v.90 modem, the speed at which you can upload (send) data is limited to 33.6K. If your system has a v.92 modem, the speed at which you can upload data is limited to 48K. Your ISP may not support 48K uploads.

Your fax communications program only sends and receives faxes at 14,400 bps even though you have a 56K modem

Current fax technology only supports a maximum send and receive rate of 14,400 bps.

The modem is not recognized by your server

- Make sure that the line connected to the modem is working and plugged into the correct jack on the modem.

- If the modem shares the telephone line with another device, make sure that the telephone line is not in use (for example, someone is on the telephone, or another modem is in use).
- Shut down and restart your server.
- In Windows 2000 Server, run Windows modem diagnostics.

To run modem diagnostics in Windows 2000 Server:

1. Close all open programs.
2. Click **Start**, **Settings**, then click **Control Panel**. The *Control Panel* window opens.
3. Double-click the **Modems** icon. The *Modems Properties* dialog box opens.
4. Click the **Diagnostic** tab, click the COM port next to the name of the modem, then click **More Info**. The *Modem Info* dialog box opens.

 If information about the modem appears, the modem passed diagnostics. If no modem information appears, a white screen appears with no data, or if you get an error such as *port already open* or *the modem has failed to respond*, the modem did not pass diagnostics.

- Reinstall the device driver. For more information, see *Using Your Server Companion CD*.
- Open your server and reseat the modem. For more information, see "Installing Components" on page 39.

The modem is noisy when it dials and connects

When your modem tries to connect to another modem, it begins *handshaking*. Handshaking is a digital "getting acquainted" conversation between the two modems that establishes connection speeds and communication protocols. You may hear unusual handshaking sounds when the modems first connect. If the sounds are too loud, you can turn down the modem volume.

To turn down the modem volume in Windows 2000 Server:

1. Click **Start**, **Settings**, then click **Control Panel**. The *Control Panel* window opens.
2. Double-click the **Modems** icon. The *Modems Properties* dialog box opens.
3. Click the modem you want to adjust, then click **Properties**.
4. Adjust the **Speaker volume** control, then click **OK**.

Monitor

The screen resolution is not correct

- In Windows 2000 Server, change the screen resolution from the *Display Properties* dialog box.

Your server is running but there is no picture

- Make sure that the monitor is plugged in and turned on. If the monitor is turned on, the power LED should be lit.
- Adjust the brightness and contrast controls to the center position.
- Make sure that the monitor cable is connected to the monitor port on the back of your server.
- Check the port and cable for bent or damaged pins.
- Reinstall the device driver. For more information, see *Using Your Server Companion CD*.
- Connect your monitor to another computer, or connect a monitor that you know works to your server.

The color is not uniform

Make sure that the monitor warms up for at least 30 minutes before making a final judgment about color uniformity.

Make sure that:

- The monitor is not positioned too close to another monitor, electric fan, fluorescent light, metal shelf, or laser printer.

- You demagnetize the screen using the monitor's degauss feature. For more information on degauss, see the monitor's documentation.

A horizontal line or wire is visible across the monitor screen

The monitor may use a thin *damper* wire, located approximately 1/3 of the way down from the upper screen edge and 1/3 of the way up from the lower screen edge, to stabilize the internal aperture grille. These wires are most obvious when the monitor displays a white background. The aperture grille allows more light to pass through the screen for brighter colors and greater luminescence. The damper wire is a critical part of the overall monitor design and does not negatively affect the monitor's function.

The text on the display is dim or difficult to read

- Adjust the brightness and contrast controls.
- Use the monitor degauss feature (see your monitor documentation) or turn off your server and monitor, leave them off for at least a half hour, then turn on your server and monitor.
- Change the display settings.
- Move the monitor or monitor cables away from sources of electrical interference, such as televisions, unshielded speakers, microwaves, or fluorescent lights.

Mouse

The mouse does not work

- Make sure that the mouse cable is plugged in correctly.
- Clean the mouse by following the instructions in "Cleaning the mouse" on page 30.
- Shut down and restart your server.
- Remove all extension cables and switchboxes
- Try a mouse you know is working to make sure that the mouse port works.
- Reinstall the device driver. For more information, see *Using Your Server Companion CD*.

Power

You press the power button, but the server does not turn on

- If the power button LED is green, the server is turned on, but you may not be seeing an image on the monitor. For monitor troubleshooting, see "Monitor" on page 112.
- If your server is plugged into a surge protector or UPS, make sure that the surge protector or UPS is connected securely to an electrical outlet, turned on, and working correctly. One way to check this is to plug the server directly into a wall outlet, bypassing the surge protector or UPS.
- Make sure that all devices are connected securely to the surge protector and turned on correctly.
- Make sure that the electrical outlet is working by plugging a working device, such as a lamp, into the outlet, then turning it on to test the outlet.
- Open your server and make sure that the power supply cable is connected correctly to the system board.
- Open your server and make sure that the power button cable is connected correctly to the system board.

When you turn on the server, it makes several short beeps

- The short beeps indicate the server has encountered some type of error. See "Beep codes" on page 100.

Printer

Printer will not turn on

- Make sure that the power cord is plugged into an AC power source.

Printer is on but will not print

- Make sure that the printer is online. Many printers have an online/offline button that you may need to press.
- Make sure that the cable between the printer and your server is connected securely to the correct port.
- Print a test page.
- Check the port and cable for bent or broken pins.
- Make sure that the printer is shared on the network (if applicable).

- Reinstall the printer driver. For more information, see your printer's documentation.

You receive a "Printer queue is full" error message

- Make sure that the printer is not set to work offline.
- Stop and restart the spooler service. For more information, see your operating system's documentation.

To make sure that the printer is not set to work offline in Windows 2000:

1. Click **Start**, **Settings**, then click **Printers**. The *Printers* window opens.
2. Double-click the icon for the printer you want to use.
3. Click **Printer**. If there is a **Use Printer Offline** option on the menu, click it to clear the check mark.

 - OR -

 Click **Printer**. If there is a **Connect** option on the menu, click it to connect to the printer.

- Wait until files have been printed before sending additional files to the printer.
- If you print large files or many files at one time, you may want to add additional memory to the printer. See the printer's documentation for more information about adding additional memory.

You receive a "Printer is out of paper" error message

- After adding paper, make sure that the printer is online. Many printers have an online/offline button that you need to press after adding paper.

Processor

Your server does not recognize a new processor

- Make sure that the processor is fully seated in its socket. The processor should be recognized automatically if it is installed correctly.

- If you have upgraded your server from one processor to two, you may need to reconfigure your operating system so it recognizes the additional processor. For more information, see your operating system's documentation.
- Make sure that a voltage regulator is installed for each processor on the system board.

Telephone support

Before calling Gateway Technical Support

If you have a technical problem with your server, follow these recommendations before contacting Gateway Technical Support:

- Make sure that your server is connected correctly to a grounded AC outlet that is supplying power.
- If a peripheral device, such as a keyboard or mouse, does not appear to work, make sure that all cables are plugged in securely.
- If you have recently installed hardware or software, make sure that you have installed it following the instructions provided with it. If you did not purchase the hardware or software from Gateway, see the manufacturer's documentation and technical support resources.
- If you have "how to" questions about using a program, see:
 - The program's online Help
 - The program's documentation
 - Your operating system's documentation
 - The software or hardware manufacturer's Web site
- See "Troubleshooting" on page 99.
- Have your client ID, serial number (located on the back of your server case), and order number available, along with a detailed description of your issue, including the exact text of any error messages, and the steps you have taken.
- Make sure that your server is nearby at the time of your call. The technician may have you follow appropriate troubleshooting steps.
- Consider using Gateway's Internet technical support. Gateway's Web site has FAQs, tips, and other technical help. You can also use the Web site to e-mail Technical Support. For more information, visit Gateway's Technical Support Web site at support.gateway.com.

Telephone support

Gateway offers a wide range of customer service, technical support, and information services.

Automated troubleshooting system

Service description	How to reach
Use an automated menu system and your telephone keypad to find answers to common problems.	800-846-2118 (US) 877-709-2945 (Canada)

Telephone numbers

You can access the following services through your telephone to get answers to your questions:

Resource	Service description	How to reach
Fax on demand support	Order a catalog of documents on common problems, then order documents by document numbers. The documents will be faxed to you.	800-846-4526 (US) 877-709-2951 (Canada)
Tutorial support.	Learn networking tips from Gateway's tutorial support on a per-issue fee basis.	877-485-1464 (US) 800-846-3609 (Canada and Puerto Rico) 605-232-2191 (all other countries) 800-846-1778 (TDD)
Gateway Technical Support	Talk to a Gateway Technical Support representative about a non-tutorial technical support question. (See "Before calling Gateway Technical Support" on page 117 before calling.) TDD Technical Support (for hearing impaired) is available: Weekdays 6:00 a.m. - 8:00 p.m. Central Time Weekends 6:00 a.m. - 5:00 p.m. Central Time	877-485-1464 (US) 800-846-3609 (Canada and Puerto Rico) 605-232-2191 (all other countries) 800-846-1778 (TDD)
Sales, accounting, and warranty	Get information about available systems, pricing, orders, billing statements, warranty service, or other non-technical issues.	800-846-2000 (US) 888-888-2037 (Canada)

Tutoring and training

Gateway's Technical Support professionals cannot provide hardware and software training. Instead, Gateway recommends the following training resources.

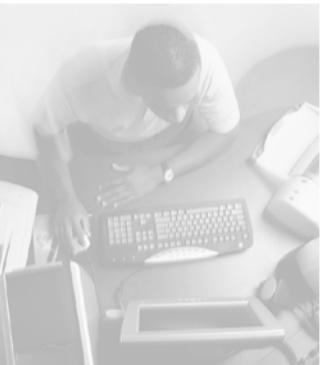
Resource	Service description	For more information
In-Store Training at Gateway stores	Our friendly and knowledgeable software trainers can teach you how to use the Internet and the most popular software programs, including Microsoft Word, Excel, and PowerPoint.	www.gateway.com/country
Gateway Learning Libraries	A variety of courses and tutorials are available on CD. Select from several easy-to-use learning libraries.	www.gateway.com/training
Online Training from Learn@Gateway	More than 450 online courses are available from Learn@Gateway. All you have to do is go online and log in. You select the subject matter, and the learning format (self-paced tutorials or virtual classrooms), all from the comfort of your computer.	www.learnatgateway.com/



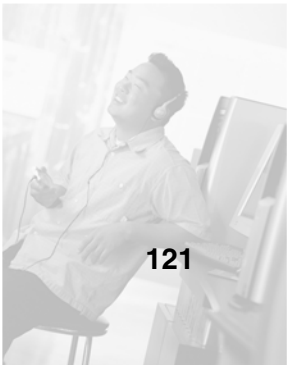
A

Server Specifications

The following specifications are for the standard configuration. Your server may contain optional equipment. All specifications are subject to change.







System specifications

Case size	Tower: 7.75 × 18 × 17.5 inches (19.69 × 45.72 × 44.45 cm)
Weight	Varies by configuration
Fans	3 chassis fans (speed adjustable)
Ports	▪ PS/2 keyboard ▪ PS/2 mouse ▪ USB (4) ▪ Serial (DIN9 interface) ▪ VGA ▪ Parallel ▪ RJ-45 LAN
Drives (standard)	▪ 3.5-inch diskette ▪ CD-ROM
Card sizes	Supports full-length, full-height PCI expansion cards
Power supply	450 W PS/2
Operating systems	Supports Windows 2000 Server Compatible with: ▪ Windows NT ▪ Novell NetWare 6
Certifications	▪ FCC Class A ▪ UL ▪ cUL

System board specifications

Processor	Dual 603-pin (E7500) or 604-pin (E7501) sockets 400 MHz (E7500) or 400 MHz/533 MHz (E7501) system bus Supports Intel Xeon CPU with 512 KB cache 1 VRM per processor, 9.1 compliant
Chipset	Intel E7500 or E7501 ▪ 400 MHz (E7500) or 533 MHz (E7501) FSB ▪ Dual PC1600 (E7500) or PC2100 (E7501) DDR-SDRAM memory channels with ECC ▪ ATA-100 IDE interface, two channels ▪ USB 1.1, 4 ports
Memory	Four DIMM slots support up to 8 GB total memory ECC, registered DDR SDRAM
PCI device/slot	On-board VGA, Gb Ethernet, and U320 SCSI PCI slots: ▪ 32 bit/33 MHz slot (1) ▪ 64 bit/66 MHz slot (1) ▪ 64 bit/100 MHz slot (4) or 64 bit/133 MHz slot (2)
VGA	On-board ATI Rage XL ▪ 4 MB SDRAM (E7500) ▪ 8 MB SDRAM (E7501)
LAN	On-board Intel 82544GC Gb Ethernet NIC ▪ 64-bit/133 MHz PCI-X interface ▪ 10Base-T/100Base-TX/1000Base-T ▪ PXE support
RAID	LSI Elite 1600 [493]
ACPI	ACPI compliance Supports: ▪ S0 ▪ S1 ▪ S4 ▪ S5

Hardware Monitor	Main logic board sensors: ▪ Voltage sensors ▪ Temperature sensors ▪ Adaptive fan speed control and fan speed detection

Environmental specifications

The following specifications identify maximum environmental conditions. At no time should the server run under conditions which violate these specifications.

Variable	Requirements
Temperature	Maximum rate of change: 18°F (10°C) per hour Nonoperating: -55° to 150°F (-48.3° to 65.5°C) Operating: 41° to 95°F (5° to 35°C); derated 0.9°F (0.5°C) for every 1,000 feet (305 meters)
Altitude	10,000 feet (3,048 meters) maximum
Humidity	Operating wet bulb: Not to exceed 91.4°F (33 °C) (with diskette drive or hard drive) Nonoperating: 95% relative (noncondensing) at 86° F (30° C)
Shock	Operating: 2.0 g, 11 msec, ½ sine Packaged: Operational after 30-inch free fall (cosmetic damage might occur)
AC input power	100-240 V, 8.0 A, 50/60 Hz

Video specifications

- DDC 2B support
- Integrated 230 MHz DAC
- 4 MB memory (E7500)
 8 MB memory (E7501)

Resolution support

	Refresh Rate (Hz)									
Resolution	**43**	**60**	**66**	**70**	**72**	**75**	**76**	**85**	**90**	**100**
640 × 480		×			×	×			×	×
800 × 600		×		×		×			×	×
1024 × 768		×			×	×			×	×
1280 × 1024	×	×		×	×					
1600 × 1200		×	×				×	×		

Electronic specifications

Memory map

Address Range (hex)	Amount	Function
0 to 07FFFFh	640 KB	DOS region, base system memory
0A0000h to 0BFFFFh	128 KB	Video or SMM memory
0C0000h and 0DFFFFh	128 KB	Expansion card BIOS and buffer area
0E0000h to 0FFFFFh	128 KB	System BIOS
0E0000h to 0EFFFFh	2 MB	Extended system BIOS
FC000000h to FFFFFFFFh	64 MB	PCI memory space

Interrupts

The following table reflects a typical configuration, but you can change these interrupts. Use this information to determine how to program each interrupt. The actual interrupt map is defined using configuration registers in the I/O controller. I/O Redirection Registers in the I/O APIC are provided for each interrupt signal. The signals define hardware interrupt signal characteristics for APIC messages sent to local APIC(s).

Important



If you disable an IDE controller to free the interrupt for that controller, you must physically unplug the IDE cable from the system board. Simply disabling the drive by configuring the SSU option does not make the interrupt available.

Interrupt (IRQ)	Description
0	8254 timer
1	Keyboard controller
2	Cascade
3	Serial port
4	Serial port

Interrupt (IRQ)	Description
5	USB
6	Diskette controller
7	Parallel
8	Real-time clock
9	ACPI SCI
10	
11	
12	Mouse controller
13	System interrupt/FERR
14	Primary IDE
15	Secondary IDE

PCI interrupt routing

PCI interrupt routing in PIC mode

Device	Interrupt A	Interrupt B	Interrupt C	Interrupt D
Rage XL	-ICH3 P IRQB			
Debug slot	-ICH3 P IRQE	-ICH3 P IRQF	-ICH3 P IRQG	-ICH3 P IRQH
Intel 82544GC	P1 IRQ 0			
SCSI 7899W	S1 IRQ 0	S1 IRQ 1		
PCI slot 1	S1 IRQ 4	S1 IRQ 5	S1 IRQ 2	S1 IRQ 3
PCI slot 2	-S2 IRQ 4	-S2 IRQ 5	-S2 IRQ 6	-S2 IRQ 7
PCI slot 3	PCI IRQ 0	PCI IRQ 1	PCI IRQ 2	PCI IRQ 3
PCI slot 4	-P2 IRQ 4	-P2 IRQ 5	-P2 IRQ 6	-P2 IRQ 7
PCI slot 5	-P2 IRQ 0	-P2 IRQ 1	-P2 IRQ 2	-P2 IRQ 3

Additional specifications

For more information about your server, such as memory size, hard drive size, and processor type, visit Gateway's *eSupport* page at support.gateway.com. The *eSupport* page also has links to additional Gateway documentation and detailed specifications for your own server.



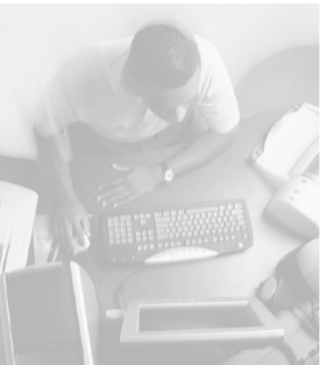
B

BIOS Settings

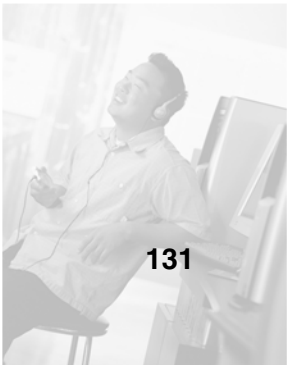
You can print this appendix, then record your custom BIOS settings on the printout. Only settings which can be changed are listed in this appendix. For a complete list of viewable BIOS settings, run the BIOS Setup utility.

To view all BIOS settings:

1. Restart your server.
2. Press **F2** when the Gateway logo screen appears during startup. The BIOS Setup utility opens.
3. Select menus and submenus to display setting information.







BIOS menu	BIOS submenu	Setting	Value
Main		System Time	
		System Date	
Advanced		Plug & Play O/S	
		Reset Config Data	
	SuperIO Configuration	OnBoard Floppy Controller	
		Serial Port1 Address	
		Parallel Port Address	
		Parallel Port Mode	
		ECP Mode DMA Channel	
		Parallel Port Irq	
	IDE Configuration	OnBoard PCI IDE Controller	
	IDE Configuration: Primary IDE Master	Type	
		LBA/Large Mode	
		Block (Multi-Sector Transfer)	
		PIO Mode	
		DMA Mode	
		S.M.A.R.T.	
		32Bit Data Transfer	
		ARMD Emulation Type	
	IDE Configuration: Primary IDE Slave	Type	
		LBA/Large Mode	
		Block (Multi-Sector Transfer)	
		PIO Mode	

BIOS menu	BIOS submenu	Setting	Value
		DMA Mode	
		S.M.A.R.T.	
		32Bit Data Transfer	
		ARMD Emulation Type	
	IDE Configuration: Secondary IDE Master	Type	
		LBA/Large Mode	
		Block (Multi-Sector Transfer)	
		PIO Mode	
		DMA Mode	
		S.M.A.R.T.	
		32Bit Data Transfer	
		ARMD Emulation Type	
	IDE Configuration: Secondary IDE Slave	Type	
		LBA/Large Mode	
		Block (Multi-Sector Transfer)	
		PIO Mode	
		DMA Mode	
		S.M.A.R.T.	
		32Bit Data Transfer	
		ARMD Emulation Type	
	IDE Configuration: Floppy Configuration	Floppy A	
	OnBoard Devices Configuration	OnBoard LAN Device	

BIOS menu	BIOS submenu	Setting	Value
		Onboard SCSI Controller	
		OnBoard VGA Device	
		Legacy USB Support	
	Remote Access Configuration	Remote Access	
Power		Power Button Mode	
		AC Power Failure	
		Standby Time Out	
Boot		Quiet Boot	
		Wait for ‘F1’ If Error	
	Boot Device Priority	1st Boot Device	
		2nd Boot Device	
	Removable Devices	1st Removable Device	
Security		Supervisor Password	
		User Password	



C

Safety, Regulatory, and Legal Information

Important safety information

Your Gateway system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

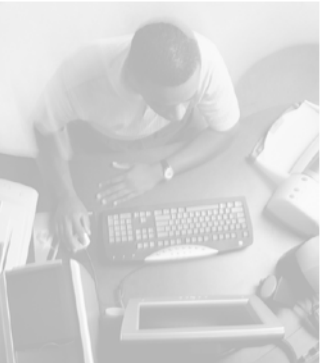
Warning



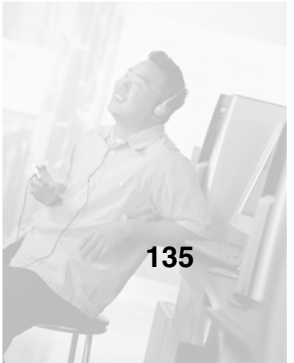
Always follow these instructions to help guard against personal injury and damage to your Gateway system.

Setting up your system

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Set up the system on a stable work surface.
- The product should be operated only from the type of power source indicated on the rating label.







- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Some products are equipped with a three-wire power cord to make sure that the product is properly grounded when in use. The plug on this cord will fit only into a grounding-type outlet. This is a safety feature. If you are unable to insert the plug into an outlet, contact an electrician to install the appropriate outlet.
- If you use an extension cord with this system, make sure that the total ampere rating on the products plugged into the extension cord does not exceed the extension cord ampere rating.
- If your system is fitted with a TV Tuner, cable, or satellite receiver card, make sure that the antenna or cable system is electrically grounded to provide some protection against voltage surges and buildup of static charges.

Care during use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to avoid eating and drinking near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer. Dispose of batteries according to the manufacturer's instructions.
- When the computer is turned off, a small amount of electrical current still flows through the computer. To avoid electrical shock, always unplug all power cables and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
 - The power cord or plug is damaged.
 - Liquid has been spilled into the system.
 - The system does not operate properly when the operating instructions are followed.
 - The system was dropped or the cabinet is damaged.
 - The system performance changes.

Replacement parts and accessories

Use only replacement parts and accessories recommended by Gateway.

Important



Do not use Gateway products in areas classified as hazardous locations. Such areas include patient care areas of medical and dental facilities, oxygen-laden environments, or industrial facilities.

Warning



To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

Regulatory compliance statements

United States of America

Federal Communications Commission (FCC) Unintentional emitter per FCC Part 15

FCC Part 15 Class A Statement

The server is designated as complying with Class A requirements if it bares the following text on the rating label:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

Caution



Changes or modifications not expressly approved by Gateway could void the FCC compliance and negate your authority to operate the product.

Telecommunications per FCC part 68 (applicable to products fitted with USA modems)

Your modem complies with Part 68 of the Federal Communications Commission (FCC) rules. On the computer or modem card is a label that contains the FCC registration number and Ringer Equivalence Number (REN) for this device. If requested, this information must be provided to the telephone company.

An FCC-compliant telephone line cord with a modular plug is required for use with this device. The modem is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68-compliant. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices which may be connected to the telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

If this device causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. The telephone company may request that you disconnect the equipment until the problem is resolved.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

This equipment cannot be used on telephone company-provided coin service. Connection to party line service is subject to state tariffs. Contact the state public utility commission or public service commission for information.

When programming or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours such as early morning or late evenings.

The United States Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone fax machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent, an identification of the business, other entity, or other individual sending the message, and the telephone number of the sending machine or such business, other entity, or individual. Refer to your fax communication software documentation for details on how to comply with the fax-branding requirement.

FCC declaration of conformity

Responsible party:

Gateway Companies, Inc.
610 Gateway Drive, North Sioux City, SD 57049
(605) 232-2000 Fax: (605) 232-2023

Product:

- Gateway 960 Server

For unique identification of the product configuration, please submit the 10-digit serial number found on the product to the responsible party.

This device complies with Part 15 of the FCC Rules. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution



Changes or modifications not expressly approved by Gateway could void the FCC compliance and negate your authority to operate the product.

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Canada

Industry Canada (IC)
Unintentional emitter per ICES-003

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Telecommunications per DOC notice
(for products fitted with an IC-compliant modem)

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should make sure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should make sure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Warning



To avoid electrical shock or equipment malfunction do not attempt to make electrical ground connections by yourself. Contact the appropriate inspection authority or an electrician, as appropriate.

The **Ringer Equivalence Number** (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Laser safety statement

All Gateway systems equipped with CD and DVD drives comply with the appropriate safety standards, including IEC 825. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

Warning



Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

Notices

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